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Clinical Lectures.

ECLAMPSIA.

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PART III. (CONCLUSION.)

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THE THEORY OF ECLAMPSIA.

We now come to a consideration of the theory of the disease. For a long time there have been two main views taken of this question. The one accepts the hypothesis of intoxication as a cause of the disease, while the other view looks for this in a change in the brain caused by anæmia and œdema.

The last named theory, which is usually designated as the Traube-Rosenstein theory has from the very first stood upon a very weak support, because it has been neither anatomically nor clinically proven, and also because the experimental support, which it received from an experiment on an animal by Oppler, was entirely valueless. This experiment was a single one, and so complicated, that just conclusions could not be gathered therefrom. The theory lacked in anatomical support for the reason that in the majority of all fatal cases any very great changes of the central nervous system are not recognized. Instead of the referred to anæmia of the brain, on the contrary a condition of hyperæmia is more frequently found, and also in only a part of the subjects, a slight œdema of the brain, or more frequently of the piamater is found. This œdema of the brain on which the coma is said to entirely depend, must be present in every case of eclampsia, according to the Traube-Rosenstein theory. Yet, I have seen as many as dozens of cases, in which even after long continued coma there was not the slightest vestige of œdema. Indeed, in the already mentioned case of eclampsia in which there were 104 attacks, the brain was so dry, that my colleague, who was performing the autopsy for me, said that one could speak of the presence of sclerosis with far greater justification than œdema.

The theory lacks clinical support, because it disregards the almost always present kidney symptoms. It only explain the rare exceptive cases in wh ich there is no albuminuria. A theory which is expected to carry weight must above all things explain the rule rather than the exception. Further, the theory renders the presence of labor pains an almost absolute necessity for the existence of the disease; for the contracting uterus is supposed to compress the abdominal aorta, and to increase thus the pressure of blood in the upper half of the body and thus lead to cerebral œdema. The great frequency of premature births, (40 per cent.) however, which we have shown to occur in eclampsia, is a patent proof of the fact that the disease frequently begins during pregnancy. Also the frequent occurrence of the disease among primiparæ and in twin births, is unexplainable by means of this theory.

The poisoning or "intoxication" theory has, on the contrary, indisputable advantages over the former.

It accepts an intoxication by means of some excrementitial matter, which directly or indirectly is eliminated through the kidneys.

It therefore predisposes a hindrance to the renal secretion, or in other words, a renal disease, which in fact is almost always the case. What noxious substances, when retained, cause this intoxication, it cannot at present be said. That it is neither uric acid nor carbonate of ammonia

is certain. No one at present looks upon this disease as an uræmia in the true sense of the word. Whether we are dealing with a collection of kreatin, kreatinin, or urate of soda—as Stumpf suggests or with acentonæmia, or finally whether we are dealing with still other poisonous substances cannot as yet be determined. The clinical evidence in support of this view is so strong that its correctness is rendered most probable.

Before all, it must be determined as to what form of renal disease must be taken into consideration. Formerly in essaying to answer this question one's thoughts naturally reverted to chronic parenchymatous nephritis. As a fact, this disease can cause eclampsia, but only the fewest cases of eclampsia are due to such a chronic renal trouble. On the other hand, one can also say with correctness, that where chronic nephritis has existed before or during pregnancy, eclampsia only occurs exceptionally (in about ¼ of the cases). In such cases severe œdemas may often occur, such as anasarca, peritoneal or pleural dropsy, often interrupting pregnancy, and still more frequently a detachment causing the death of the fœtus. The mother also not infrequently succumbs at its subsequent birth, after a pregnancy of great suffering, but as has been said in such cases eclampsia occurs with relative rarity.

Especially through the investigations of Leyden and his pupils, we have come to learn that eclampsia is usually due to quite another and acute renal process, in which the principal feature is an acute fatty degeneration of the renal epithelium, in the tubulis contortis. The further results are the appearance of albumin in the urine, usually in an extraordinary amount, and a most severe and acute suppression of the secretion of urine, which is all the more severe since usually both kidneys are affected. If the process occurs gradually, as in chronic parenchymatous nephritis, and especially when one-sided, compensation is established by the action of the other kidney, or of the affected kidneys themselves. In acute disturbances, however, such a result is difficult, the poison is absorbed and the patient is intoxicated.

The rapid course of the eclampsia in favorable cases harmonizes well with the rapid course of the kidney affection in the same cases. No sooner has the eclampsia ceased than in the shortest time imaginable the renal troubles have also disappeared. In two days the amount of albumin will be reduced to a remarkable extent, no matter how large it may have been, and in four to eight days more all traces of it have disappeared. Simultaneously the previously greatly depressed diuresis becomes more free, and consciousness again returns.

The condition of the patient and the function of the kidneys, remind one forcibly of the *stadium asphycticum* of cholera, as in the latter, one may regard the appearances of free diuresis as a probable indication of ultimate recovery.

The proof of the fact that in Leyden's so called "kidney of pregnancy" we are dealing with an acute process, seems to me to be the most important point of the discovery. Now, all can readily understand the acute nature of the entire affection, both the eclamptic as well as the other symptoms.

The next question that comes to our mind is the manner of the development of the kidney symptoms, and their nature. Leyden is of the opinion that the condition is primarily one of acute anæmia, resulting in ischæmic necrosis of the renal epithelia. According to my own opinion the anatomical findings do not seem to accord with this view. On the contrary, apart from the fatty degeneration of the epithelia, the formation of cylinders in the passages of the inner substance of the organ especially, infiltration of the outer substance, and more frequently a hyperæmic condition, at least of the cortex, or outer substance of the kidney.

And now we come to a consideration of a more remote question, or the ætiological moment of the disease.

For a long time the changed pressure exerted upon the various organs in pregnancy has been blamed for these morbid processes, and as a fact good causes for such an opinion exist. The fact that seventy-five or eighty per cent. of eclamptics are primiparæ, and that among these, there are many with firm muscles, and therefore firm abdominal walls, and finally that twin-births and hydramnios are especially frequent in cases of eclampsia (among our 200 cases there were sixteen twin-births, instead of the nominal proportion of two to three)—all these facts seem to elucidate, and indeed to leave scarcely any room for doubt, but that the increased

intra-abdominal pressure plays an important part in the production of the disease.

The theory of Löhlein, Halbertsma, and others, to the effect that this pressure causes a compression of the ureters, and in this way checks the secretion of the kidneys, can assuredly not be set aside or disregarded.

Years ago, Stadtfeld called attention to the frequency of the dilatation of the ureters during pregnancy and parturition, and we have had opportunity enough to frequently verify this fact on the autopsy table. Stadtfeld* found in sixteen parturients dilatation of the ureters nine times, either of one or both ureters.

In our records of the autopsies of 103 parturients, who died from diseases other than eclampsia, the condition of the kidneys is only referred to in seventy-five cases. In nine of these the ureters were not dilated, in twelve cases the ureter of one side was dilated (ten times the right side and twice the left); in four cases both ureters were dilated, but usually the right more than the left. The dilatation always began at the entrance of the small pelvis. That portion of the ureter lying in the lower or small pelvis was not dilated. Stadtfeld, who observed this, attributed it to a pressure on the ureter by the common iliac artery. In some instances this may be the case, in others it more probably is a pressure between the uterus and the bony ring of the pelvis. The predominence of the dilatation of the right ureter accords well with the frequency of dextro-version, and displacement of the uterus towards the right.†

That, however, the compression of the ureters and the renal disturbances resulting therefrom, constitute the usual, or even a frequent clause of eclampsia, is disproved by the post-mortem findings. Löhline in his thirty-two autopsies of eclamptic subjects found the ureters only dilated in eight cases. We found the right ureter dilated five times, the left once, with simultaneous intense hydronephrosis sinistra, in thirty-seven autopsies on eclamptics. Once we also found a slight hydronephrosis of the right side, but without dilatation of the corresponding ureter.

Here I agree with Schauta, in maintaining, that one most assuredly cannot blame the compression of the ureters with being a frequent cause of eclampsia. It is indeed most improbable that the compression of one ureter, even if continued and causing dilatation, would under ordinary circumstances cause such a disturbance of the renal secretions in general as to produce an uræmic intoxication. On the contrary, we do acknowledge that this may exceptionally be the case, and moreover consider that it was so in one of our cases.

In the case referred to the right kidney was a so-called "cystic-kidney," while the left ureter was considerably dilated, and the hydronephrosis was so intense, that in the report of the autopsy is read that "the left kidney consisted only of a pyramid." This peculiar and rare complication must have occasioned a considerable disturbance of secretion, which might well have been productive of eclampsia without any other renal disease being present.

I hold that this case is vastly interesting and important, since it proves that a severe disturbance of the renal functions can result in eclampsia; independently of the way or means by which this disturbance, or rather obstruction, is brought about.

When, therefore, the compression of the ureters only plays an exceptional rôle in the production of eclampsia, and the intra-abdominal pressure seems to be a matter of importance, it can be asked whether or not a deleterious pressure is exerted upon the renal vessels. Leyden's views would lead one to think of a pressure upon the renal artery. I have already mentioned that the anatomical findings do not concur with this view, because of the frequent presence of a hyperæmia rather than an anæmia. An isolated pressure upon the artery, without affecting the vein, is scarcely to be thought of, since the two vessels lie so close to one another. A pressure upon the vein alone, or upon both vessels is more probable than upon the artery alone. That it is by no means an anatomical impossibility for the gravid uterus to exert a pressure upon the renal hilus, any one will acknowledge who has, either at autopsies or at laparotomies, noticed how the posterior walls of the soft uterus is flattened against the spinal column and other organs, in such manner

*Hospital's Tidende, June 26, 1861; see *Monatsâhr. f. Geb'k'de*, Vol. XX, p. 69.

†The fact that in 78 out of the 108 parturients, no notice was taken of the condition of the ureters, counts for naught, since many of these were admitted with peritonitis or pyæmia, often not until some time after the birth of the child.

as to seem spread out against the posterior abdominal wall.

The theory has been also advanced that the renal affections are only secondary, and occur after an infection or intoxication through some other channel. According to this view, the kidneys become affected and diseased, similarly as in scarlet fever, diphtheria and other diseases, in that the products of infection are eliminated through these organs, which cannot occur without occasioning a disturbance of the tissue and functions of the organs in question.

The attempts, which have been made by Doléris and others to demonstrate the infectious origin of eclampsia must be regarded as complete failures; and there is no probability of any explanation of the ætiology of the disease coming from this direction.

Then it has been endeavored to reconcile the theory of the products of tissue change (stoffwechsel) in the fœtus, which are absorbed into the maternal circulation, and thus causes eclampsia. This theory was supported by fact that in cases of eclampsia in which the course of pregnancy has not been interrupted; with the death of the fœtus the danger of a return of the eclampsia at its subsequent birth, is removed. This seems right enough, but it seems to me, besides the above, that in every case of eclampsia of pregnancy which has been checked without occasioning the birth of the fœtus, the disease will fail to return at the time of delivery, whether the child is dead or alive. I have seen two such cases (not included in the two hundred cases upon which this article is based), in which the pregnancy proceeded after the cessation of the eclampsia, and ended finally in the birth of a living child.

The one case was that of a duopara, twenty-eight years old, who had four eclamptic convulsions, and five days later, a fifth convulsion, and after the lapse of ten days more, was delivered of a living, although perhaps premature child, weighing 1760 grammes and 44 centimetres in length. The second case was that of a primipara who had thirteen convulsions. These ceased after the hypodermic exhibition of 0.05 gram. morphine, and the patient's consciousness fully returned. Twenty-four hours later labor began, and thirty-four hours after the last attack she delivered a living child.

C. Braun, also, in his work,* saw a living child born fourteen days after the cessation of eclampsia, and after the albuminuria had also disappeared.

In the yearly report of the Obstetrical Department of the Charité Hospital (Berlin) for 1888-89, there are four cases reported by Hensoldt, of eclampsia of pregnancy, in two of which living children were born three and seven days after the discontinuance of the eclamptic attacks, and without causing their removal.

Brummerstädt† has also reported that in thirteen cases of eclampsia occurring during pregnancy, between six hours and twenty-one days later, six dead and seven living children were born; and only in one case did the convulsions, which had ceased for six days, return.

Also the fact already referred to, that eclampsia not infrequently occurs long after the death of the fœtus, only tends further to prove the incorrectness of the theory in question.

So long as it has not been proven, that the death or life of the fœtus makes the least difference, the theory that eclampsia is due to an intoxication emanating from some fœtal secretion, has not the least weight.

I will now turn to a theory recently advanced by Herff‡ regarding the theory of eclampsia. According to this auther eclampsia is due to a peculiar excitability of the psychomotoric centres of the brain —for instance the subcortical centres. This excitability develops during pregnancy through the basis of an inherent psychopathic condition; yet that the physiological irritation produced by gestation does not usually suffice to cause the disease, but is augmented by other exciting causes, notably a slight *uratin* intoxication.

This explanation of the disease, so far as the psychological condition is concerned, seems to us to be an entirely unproven one, although it may seem justifiable to the views of modern neuro-pathologists who always look for some hereditary or neuropathological cause. Otherwise the theory, seems to contain only a round-about description of the facts of the case.

Among the means, which are at the

*C. Braun, *Lehrbuch d. gebh.* 1857, page 489.

†Loc. cit., p. 100.

‡*Münchener med. Wochenschrift*, 1891, No. 5.

service of investigators to enable them to clear away what is obscure regarding the disease, those made use of by Fehling and Stumpf, which deal with an examination of the secretions and blood, seem to us most justifiable. The experiments upon animals which have been undertaken in the endeavor to produce an artificial eclampsia have so far revealed nothing; and if they ever expect to, they must surely be undertaken in some different manner.

At this point, I would take the opportunity to say, that there is an intoxication, which is capable of producing convulsions, such as no experiments upon animals have equalled, and which resemble eclampsia convulsions to the most minute point. I refer to the intoxication, or poisoning producible by bichloride of mercury. The convulsions caused occasionally by this drug, are in every respect exactly like those of true eclampsia. They occur after short intervals, and may be easily mistaken for eclamptic convulsions.

This deception, as a fact, occurred in a case of ours. The patient was a septapara, in whom on account of a narrow pelvis, an abortion was contemplated, and with this end in view a bichloride solution (1 to 15,000) was injected between the fœtal membranes and the wall of the uterus. She was shortly after delivered of a dead child without assistance and eight days later had two eclamptic attacks. The temperature of the patient went up to 40. 30° C., and the pulse 116. The attack was considered to be eclamptic, and it was only the autopsy that revealed the truth. Besides the nephritis, there was diphtheritis of the large intestine, especially intense in the ascending colon. Both kidneys were enormously enlarged or, at a later examination (not undertaken by us) were found to be affected with necrosis of the epithelia, with a deposit of phosphate of lime in the passages of the organ.

The very late appearance of the eclampsia, at the eighth day of the puerperium, proves the correctness of this ætiology.

We can draw an instructive lesson from this case; namely, that in puerperal eclampsias which occur very late, the possibility of a bichloride of mercury poisoning (presupposing that the drug has been used) must be considered. In an exactly similar way, I observed eclamptic attacks in an old woman, which were not but a symptom of bichloride of mercury poisoning. One case, similar to ours, has been reported by Löhlein* The patient was a primipara, thirty-eight, who during the child-birth, had received several uterine injections of carbolic acid solution. Afterwards the acid appeared in the urine, and fifteen days after the birth of the child, the patient had five eclamptic attacks. The patient recovered.

It cannot be denied, however, that rarely cases of true puerperal eclampsia occur some time after delivery. In 1869 I saw such a case. The first attack occurred fifteen days post-partum, and the patient died after the fourth convulsion. The urine contained neither albumin nor cylinders. In the report of the autopsy, both kidneys were described as being in the "second stage of Bright's disease."† A few other cases have been reported by Löhlein.‡

Between this kind of toxic eclamptic convulsions and eclampsia gravidarum there is a decided analogy, which consists in a more or less acute obstruction of the secretion of urine, and it can also occur that both will have the same effect and cause the same pathological process. So, it can be very possible that in searching for the cause of the convulsions in bichloride of mercury poisoning, we may be able to throw additional light upon the cause of the true eclamptic convulsions. In order to tersely express my own theory as to the ætiology of *eclampsia gravidarum et parturientium*, I will briefly repeat what I have said at length in this article:

The disease consists in an intoxication, caused by what as a rule consists in a rather acute obstruction to the functions of the kidneys. The latter consists in the majority of cases in an acute or subacute pathological change in the parenchyma of the kidney, and especially also of the epithelium of the passages in the kidney. More rarely chronic parenchymatous nephritis (morbus Brightii), or interstitial nephritis can be the cause of the disturbed renal secretion; or, it may go as far as a chronic interstitial nephritis, and an acute fatty degeneration, in which case a deleterious result can be occasioned with greater ease. Exceptionally, entirely different changes in the kidneys can give rise to an acute suppression of the secretion of urine; for

Zeitschr. f. Geb., Vol. VIII., p. 537.

† See Maye, *Dissertation*, Halle, 1869.

‡ Löhlein, *loc. cit.*

instance, in especially favorable cases (such as previously impaired function of one kidney), acute suppression of the secretion of urine by compression of the ureter, and hydronephrosis or a pathological change of the renal parenchyma by toxic substances (bichloride of mercury or carbolic acid). These last add by far greater weight to the theory of intoxication.

If an attack of eclampsia ceased without interrupting the course of pregnancy, then at the birth which occurs later there is scarcely ever a repetition of the disease. That this is due to the death of the fœtus has not been proved.

For the prognosis of eclampsia the possibility of quickly terminating the delivery must be taken into consideration, as well as the number of convulsions and their intensity. A high temperature and a bad pulse indicate the worst possible prognosis.

The *sensu strictori* puerperal eclampsias seem to offer a favorable prognosis, if they occur within one or two hours after delivery. If they occur some time after delivery they offer a most unfavorable prognosis.

Numerous cases of eclampsia (30 to 40 per cent.) occur before any appearance of labor, during the course of pregnancy.

In a very few cases there is a warning or *aura* before the first eclamptic attack, or else it seems that the consciousness of the patient is retained during the first part of the convulsion.

The absence of albuminuria is a most rare occurrence, and also the absence of pathological changes of the kidneys (found at the autopsies) is very rare.

Regarding the therapy, I recommend morphine in large doses and when on account of the small pulse and greatly contracted pupils, no more may be given; then chloral by rectal injection.

In multiparæ the amniotic sac should be ruptured as soon as possible in order to induce, and accelerate the birth of the fœtus. So soon as the size of cervix no longer offers any opposition, the forceps should be resorted to. Version and incision of the cervix, is a practice that should be restricted as far as possible.

In exceptional cases, for the sake of the mother, or if she is moribund, for the sake of the child, Cæsarean section is indicated; but it is never quite impossible to give any precise indications as to when it is justifiable.

TRANSLATOR'S CONCLUSION.

In presenting this most exhaustive and admirable article on *Eclampsia* the translator feels convinced that the REPORTER, has made a valuable addition to the literature on this subject in the English language.

In translating, very little change from the original has been made, other than frequent amplification for the sake of clearness and a weeding out, as far as possible, of abstruse scientific terms, with which the original abounds, and then substitution of plain English. The writer's facile style has been reproduced as closely as possible. The quotations from other works have been verified as far as possible.

The following literature has been made use of in this work:

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BRUMMERSTADT, *Report of the Rostock Midwives-school, 1865.*

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HOFMEIER, *Zeitschrift für Geburtshülfe, Vol. III.*

MEYE, *Dissertation at Halle, 1869.*

LÖHLEIN, *Zeitschrift für Geburtshülfe, Vol. VIII.*

HERFF, *Münchener med. Wochenschrift, 1891, No. 5.*

STADTFELD, *Monatschrift für Geburtskunde, Vol. XX.*

ON A GENERAL INFECTIOUS COMPLICATION IN LUPUS VULGARIS.

V. Lespinne (*Le Mercredi Mèdical*, 1891, No. 35) believes that there may be produced in the course of the evolution of lupus a special general complication due to absorption of toxic microbes taking place from the surface of the ulcer, this poisoning announcing itself by a sharp increase of temperature, with typhoidal state, catarrhal phenomena of the mucous membranes. This complication may be the signal for the period of invasion of the whole organism, general tuberculosis taking the place of the local tuberculosis of the skin.

HYSTERIA AND FÆCAL IMPACTION IN A NEUROTIC CHILD.

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This little patient I have not seen before but I understand that the case is one of fæcal impaction. The history is as follows: H. S., aged 12, born in N. J., entered Hospital Sept. 29; parents, two brothers and two sisters living and well, none dead. The boy says that when a baby three weeks he was sick but his parents have never told him what the trouble was. From this time the abdomen began to increase in size. There is no history of traumatism. The patient can remember that the abdomen was considerably distended when he was four or five, and the bowels were very irregular, passage occurring at intervals of from three days to two weeks, and then unusually, because pills had been taken. After free movement of the bowels, the abdomen has diminished in size. No passage for three or four weeks till the day previous to entering hospital.

It is a good plan always to examine a patient carefully in a general way before beginning the special examination of the region supposed to be affected. The patient is a bright looking boy, though rather neurotic apparently. On raising his hand and arm, he holds the limb elevated for two or three minutes without moving. He lies unnaturally quiet for a child of his age, suggesting the state of trance. There is a peculiar tremor of the eye lids which is quite characteristic of hysteria. Children, even males, we must remember, are apt to be hysterical as well as women. The tongue is coated, rather broad and somewhat indented by the teeth. The gums appear fairly healthy and neither here or else-where is there evidence of anæmia. The breath is exceedingly unpleasant. The boy says his appetite is usually good though he ate no breakfast this morning.

The chest is cone-shaped as it usually is in young children who have punchy abdomens from accumulation of gas or fæcal matter, or from any enlargement of the viscera which causes encroachment on the thorax and stretching out of the lower ribs. If this child should maintain the stretching of his lower ribs until they have hardened from the deposition of lime salts, the chest would remain permanently in this shape. The crooked and variously distended chests which you so commonly see, date back in most cases to infancy and are due to abdominal distention or chronic cough, the result of bronchitis, emphysema, etc., particularly when rachitis is present.

Such an enormous abdomen might be due to distention of the stomach or intestine, to enlargement of the liver or spleen, or ascites. The liver is, of course, pressed upward, even if not enlarged, and we find on percussion that dullness begins just under the nipple. The area of dullness is not extensive, reaching barely to the edge of the ribs, but even there there is resonance due to the condition of the intestine. There is no indication of enlargement of the spleen, by percussion. The abdomen is tympanitic. So there cannot be ascites. The trouble is due to the distention of the intestines or stomach, or both.

Why should fæcal matter accumulate in the intestine of a child of this age? The causes of fæcal obstruction are usually to be studied in connection with the causes of chronic constipation. Chronic constipation in children must be due either to lack of innervation, and therefore loss of motility on the part of the muscular coat of the bowel, or to a lack of secretion, both of which elements facilitate the evacuation of the bowel. At the caecum there is a certain obstruction to the current of fæcal matter in the small intestine, and normally the consistency now increases gradually till it reaches the sigmoid flexure, which is a sort of valve, where the fæcal matter is held until the act of defecation. Sometimes, however, it is retained in the rectum, but normally above the sigmoid. Anything that will for a long time lead to imperfect secretion or imperfect motility of the bowels, will also cause constipation. The trouble more often occurs in the large intestine than in the small, and more often in the sigmoid region than in the rectum. Weakening of the motility of the intestine is a kind of paresis, and it may, in an extreme degree, almost amount to a paralysis. This lack of motility is apt to come about through negligence of the bowels; a person who does not respond to the demand of the bowels for evacuation, blunts the sensibility of the part and leads

to its sluggishness, and this is the most common way in which chronic constipation is acquired. Those who are disturbed in intellect and blunted in their sensibilities generally, are almost always affected with sluggishness of the bowels. The neurotic comes into this class and here we must place this boy. Again, the muscular coats of the intestine may be weakened from inflammation, the mucous membrane secreting less abundantly, and therefore furnishing less lubricating matter for the movement of the intestinal contents. Inflammation of the serous covering of the intestine—that is peritonitis—also causes weakening of the muscular power of the bowels. In chronic enteritis, the normal secretions are changed, mucus may be secreted in considerable quantities, but at other times, even that secretion is scanty. We therefore have diarrhœa followed by constipation, and again diarrhœa. With these cases of chronic catarrh we often find the accumulation of large scybalous masses which cannot be expelled, although around them the thinner fæcal matter passes and there are evacuations of the bowels while the hard masses remain in place. Sometimes these scybalæ become so hard that it is difficult to indent them except with a sharp instrument. This condition is rare in the small intestine, happening most frequently in the transverse colon and sigmoid flexure, but also in the caecum and the rectum. Persons thus affected may say that there is a regular movement of the bowels every two or three days, and on examination we may find the rectum filled with a hard mass, which no power of the the patient can expel, but the irritation may set up an increase of the secretion around it, and thus there will be periodical diarrhœa. This mass should be dug out with a spoon-handle, the spatula, or whatever happens to be at hand, and it may be softened with an emetic of warm water, assisted, it may be, by oxgall or Epsom salts.

In this case, on account of the neurotic element, the child has neglected to empty the bowels and a lack of motility has been developed. From the retained fæcal matter, gas is evolved which he belches up through the mouth. The foul breath and the coated tongue are very natural accompaniments. One would suppose that there would be sufficient toxæmia from the long retention of fæcal matter to make the boy sick but his general condition seems good and he has no fever. I should advise giving him in the first place calomel to stimulate the secretion of the bowel, with it might be given small quantities of ipecac. I should then give him castor-oil in regular doses, perhaps half an ounce every two hours repeated till the bowels are empty. Meanwhile the bowels should be cleaned out from below, by the finger and spoon if necessary, in order to empty the rectum, and following this an enema and then a soft tube should be introduced 24 to 30 inches and a solution of ox-gall ℥ij. to a quart of water should be carried high into the colon. This is usually the most efficient means of softening such a hard fæcal mass.

NOTE.—Ten days later the boy was presented at the clinic, when he was apparently well. This change resulted from the treatment described to you, with the addition of half a pint of the milk of asafœtida, in divided doses daily.

Further observation showed that the boy was in the highest degree hysterical and, undoubtedly, for his improvement we are largely indebted to the asafœtida.

A NEW VARIETY OF TROPHO-NEUROSIS OF THE SKIN.

Mm. Hollopeau and Larat (*La Semaine Médicale*, 1891, No. 47) describes a condition of the skin characterized by dyschromia and lichenoid eruption. Reference is made to the various dyschromias due to nervous origin which have been described by authors, and to the concomitant phenomena, consisting of disturbances of sensibility and of the vascular system, and disorders of secretion; to which may be added, as shown by a case of the author's, impaired nutrition of the hairs. A case recently observed shows that lichenoid papules may also be produced by the same causes. They make a résumé of their observations as follows: There exists a dermatosis characterized by achromatous patches surrounded by a papular border and by increased pigmentation. This dermatosis is probably a cutaneous manifestation or hysteria. The papules, lichenoid in kind, may be of a tropho-neurotic origin. They are not necessarily akin to pruritus. Cutaneous electrization in the form of bath, with the faradic current, seems to be indicated.

Communications.

DISCUSSION ON ELECTRICAL EXECUTION.*

By A. D. ROCKWELL, M. D.
NEW YORK.

While I do not believe that the best use to which a man can be put is to kill him, yet all will agree that if the law will kill, let it kill decently. It is evident that the sentiment against hanging and in favor of some method quicker and less repulsive is strengthening and that other methods will sooner or later replace the rope everywhere. Mr. Edison while in Paris during the exposition gave his opinion so positively in regard to the efficiency of electricity that the Medical section of the French Academy of Sciences aided by Marcel Duprez, a prominent electrician, have had the matter under careful investigation. There is always opposition and friction attending changes for the better, and this change has been no exception to the general rule. The whole tendency of our civilization is however in the direction of humane methods in dealing with criminals and that form of execution which is quickest and least repulsive should be adopted. It is a mathematical impossibility that any human being receiving in proper form an electrical current of lethal energy should appreciate even for a fraction of a second the slightest pain. It has been ascertained that the brain is one-twenty-fifth of a second in recognizing an impression, and one-twenty-eighth of a second in telegraphing that an impression has been received, and as nerve force travels only about 100 feet a second, while the velocity of the electric current is millions of times greater than this, the brain has absolutely no time to appreciate a sense of pain. As between electricity and certain other methods of capital punishment it is not altogether clear that the former is the best that could be suggested. The guillotine and the garote are practically instantaneous and painless in their action and attended with only a fraction of the paraphernalia and expense of the method now adopted in New York State. There is however an apparent brutality attending both these methods that repels, and a mutilation and shedding of blood, which public opinion in this country seems unwilling to tolerate.

The action of poison is open to none of these objections, and it seems somewhat singular that it has not more strongly commended itself to the philanthropic mind seeking simpler and more humane methods in the legal taking of human life. But as between electricity and the rope there can, it seems to me, be no question. Let us suppose that it had been customary to execute by electricity instead of by hanging, and that some one in the supposed interests of humanity should suggest that the former method be abolished, and the latter substituted; that a method practically instantaneous and painless, unattended by mutilation and without any distressing outward manifestations of pain, be replaced by one which usually fails to extinguish life for ten or twelve minutes, which in many cases it is reasonable to believe is attended with torture, and where the convulsive manifestations are horrible to witness—such a suggestion could not have the slightest claim for serious consideration, and as a matter of fact would never be offered.

After the passage by the legislature of the state of New York of the law substituting electricity for hanging in the execution of criminals, there arose a terrible storm of opposition that apparently had for its basis extensive commercial interests. It was claimed by the opponents of the new method, that electricity was by no means certain to destroy life without the infliction of great pain, and the popular mind was agitated by repeated assertions of the possibility and probability of repulsive disfigurement by the heat and chemical action that would necessarily be developed in the use of currents of such great power. To determine these points and to advise the state as to the best methods of procedure, a commission was appointed consisting of Dr. Carlos MacDonald, Chairman of the State Commission in Lunacy, Prof. L. H. Lady, of Columbia College, and the writer, who both at the Edison Laboratory and at the various prisons of the state, experimented largely upon animals, and tested many devices and methods for the application of the current. There could be no charge of cruelty in these investigations

* Read before the Neurological Section of the American Medical Association, Detroit, June 8, 1892.

for in no single instance was there any evidence that the slightest pain was inflicted.

The largest animals such as horses and a bull instantly succumbed to an electric pressure of one thousand volts, while dogs and calves were as readily destroyed by five and six hundred volts.

But one impact of the current was found necessary, for death was instantaneous in every case.

Immediate examination after the opening of the circuit invariably failed to elicit the slightest respiration or heart beat, and careful and persistent efforts at artificial respiration conducted by Dr. Fell, of Buffalo, with the latest and most approved appliances were without avail.

In view of the fact thus satisfactorily demonstrated that one thousand or at the most fifteen hundred volts would instantly kill any animal large or small, we very naturally inferred that any human being would succumb even more readily, but to make assurance doubly sure, it was recommended that not less than 1,500 or 2,000 volts be employed in the execution of criminals. To our great surprise therefore it was demonstrated at the first electrical execution and confirmed in every subsequent attempt, that it was far more difficult to kill a man by electricity than any ordinary domestic animal however large. In the only execution which the writer attended, when four criminals were successively subjected to the electric stroke, the first contact of twenty seconds with a voltage of 1,700 left its victim apparently lifeless, with the exception of a slight fluttering of the pulse and what appeared to be a slight expiratory effort.

Because of these faint evidences of vitality it was decided then and has been customary since to repeat the shock once and sometimes twice. That the victims were however in every instance so thoroughly devitalized by the first shock as to preclude the possibility of resuscitation, and that every vestige of consciousness was instantly obliterated, admitted of not a shadow of a doubt. In these cases a man's brain acts in two ways and I should say that the reasons for this increased strength of current necessary in the case of a human being were both physical and psychical. In the first place, the man knows what is coming and every nerve and muscle is tense with involuntary resistance. There is a mysterious likeness between nervous force and electric force; not a resemblance exactly, but a something about each which science has yet to fathom.

I have no doubt that this nervous tension operates directly to impede the action of the electricity, while the secondary effect is physical. The body conducts electricity by virtue of its saline solutions.

Now, fright drives the blood away from the surface to the central portions of the body.

When a man is placed in the chair he is necessarily terribly frightened, and the result is that the surface tissues are unnaturally dry, and hence inferior conductors. With an animal these influences do not prevail, but the most striking confirmation of the probable truth of this suggestion lies in the fact of the greater readiness with which life is extinguished in men from accidental contact with electrical energy.

Even where the contact has been incomplete and imperfect, linemen have been instantly killed with electrical potentials no greater than those employed in judicial executions. When a man thus accidentally comes in contact with the current, his will or nervous force is in a passive state and offers no resistance to the action of the current, while the surface of the body is usually flushed with the exertion of work and in the highest state of conductivity. Notwithstanding the efforts of a united press to exaggerate results, no one who has once witnessed a properly conducted execution by electricity can fail to commend it as a most humane method as compared to hanging. Aside from the fact that a human life is being taken by violence, there is little in connection with the execution that is revolting to the senses. After the first convulsive movement as the current is received, every muscle is simply tense and motionless until the current is broken when relaxation takes place and the man is to all intents dead.

It will be recollected that the press raised a great outcry against the use of electricity, not only because of its supposed inefficiency, but because of what was described as repulsive mutilation by burns and scalds. While the degree of heat generated and the influence exerted upon the superficial tissues, varied in the different cases, according to the position

of the electrodes and the density of the current near the points of contact, in no instance was there any such repulsive disfigurement as has been intimated, and in all but one or two the effects produced were so superficial and slight as to be unworthy of comment. It cannot be denied however, that owing to the limited area through which the tremendous voltage required has to operate, and the immense resistance offered to its passage there occurs a remarkable drop in potential and an astonishing development of heat, which, without the exercise of the most intelligent and careful supervision, might result in such severe burning as to bring under public condemnation a method which thus far commended itself to all eye-witnesses.

But it is not voltage alone that kills, but its rate of expenditure in the body as expressed by amperes, and the time consumed in its expenditure as expressed by the volt, ampere seconds indicating the measure of the heat developed during the action of the current. As stated by the distinguished electrical expert, W. J. Jenks: "None of these factors are well settled as yet in their relation to the energy actually required to cause instant and painless death. By death, I mean now not alone cessation of consciousness of a perfectly healthy human being in an interval too brief for thought to measure and the establishment of conditions which produce gradual and final expenditure of the stored nervous energy of the brain and the subordinate centres of distribution of vital force—such as the pneumogastric nerve and the spinal cord—I mean also, total paralysis of all the vital organs and of the nervous centres by which they are directly or indirectly vitalized, and by which the muscles of the extremities are actuated, so that when the current is broken there can be no reflex action of the muscles, such as would indicate the presence of residual life energy, or a possibility of its resuscitation."

The question which physicists must determine is how with a comparatively low voltage the same number of amperes that are expended upon the periphery and therefore in a measure lost—could be made to act exclusively on the centres of life and nervous activity, instantly devitalizing them while leaving no outward manifestations of the terrific power employed. It has been asserted that the subject of executions by electricity is one with which the physician should have nothing to do, and vigorous protests have been made against the propriety of allowing the subject of legal executions to be discussed in our medical societies.

In arguing that the function of the physician is to save life and not to be in any way connected with devices that destroy, it is forgotten that in one of the departments of our art, our noblest efforts are enlisted in taking, for the purpose of saving life; and when death is inevitable the physician is at hand to soften the transition from visible time to invisible eternity. When the law therefore decides that some new and better method be adopted in the disposition of those against whom its heaviest penalty has been decreed, who but he should be selected to advise the state as to the proper technical methods of procedure.

Whatever is worthy in action, is proper in discussion and as one of the advisory commission appointed by my state in the interests of the best methods of execution by electricity, I have felt that our work was never along more truly professional lines or more in the interests of humanity.

THE TREATMENT OF HÆMORRHOIDS.

At a meeting of the Medical Society of London, Lauder Brunton (*Lancet*, No. 3576, p. 583) dwelt upon the influence of cold and over-eating in the development of hæmorrhoids. Mercurials, followed by mild salines, are useful in preventing hepatic congestion. Aloes, in large doses, may conduce to the development of hæmorrhoids by over-stimulation of the muscular coats of the rectum. Small doses, on the contrary, exert a beneficial influence. Hepatic congestion due to cold may be relieved by the application of hot-water bags to the nape of the neck and over the liver. Patients subject to hæmorrhoids should become accustomed to emptying the bowels at night, so as to secure rest in the recumbent posture. When there is much irritability at the anus it is preferable to use a soft sponge and water instead of paper more or less harsh. A pledget of animal wool dipped in hamamelis and introduced into the rectum will act as a mechanical support and as an astringent. In obstinate cases an anal pad may afford great relief.

ACUTE RHINITIS WITH RETENTION OF SECRETION.*

By C. E. PERKINS, M. D.,
SANDUSKY, OHIO.

In taking up a small portion of your time, to-day, I desire to call your attention to a case which has been very interesting as well as somewhat perplexing to me, and I hope that the narration of this case may bring to your minds similar ones which you have met in your experience. And if it does, I would like to ask you to narrate them for our mutual profit, as in trying to find some elucidation of this subject, in text books and articles in medical journals, I have been greatly disappointed. We know that but very few cases, comparatively speaking, of acute catarrhal rhinitis are accompanied with symptoms of sufficiently severe character to lead the patient to consult a physician, but that these do occur in which the diagnosis is very difficult and the symptoms severe, I think will be shown from the following case:

Miss M. K., aged 30, unmarried, consulted me on Feb. 9th, this year; her family, as well as personal history, was negative as to tubercular, rheumatic and specific disease; unless we might be inclined to consider an attack of measles (so called) occurring in January, '91 as a syphilitic manifestation; but I cannot do so as some four or five other members of the family had the same trouble at the same time and all recovered without treatment of any kind. Up to the commencement of this trouble she had been exceptionally healthy and robust, having never required the services of a physician.

In the latter part of October last she was taken with what she considered an ordinary cold. There were the ordinary symptoms of acute catarrhal rhinitis, viz: malaise, dryness and heat of the nose followed by discharge, etc., etc., but she had in addition to all these a severe neuralgia on the right side of the face, which persisted for about a month. Early in December complete stenosis of the right side of the nose developed and the left was partially occluded. At this time there was a swelling across the nose, frontal and nasal pains, and slight epiphora, and there was very little running from the nose and that of a watery character. About these same symptoms continued until just before Christmas when she consulted her physician. I am quite certain that he considered the case as one of nasal syphilis, for he prescribed mercurial inunctions and insufflated iodoform daily. She continued under his care for six weeks. At one time in January she had a hoarseness for one week. The right nostril continued occluded and the left became completely so, although he was adopting rigorous antisyphilitic treatment. Not making any improvement she consulted me on the 9th of February. I found her weak and anæmic and somewhat emaciated. There was complete loss of appetite, and swelling, redness, and pains across the nose.

These pains were so severe as to interfere with sleep; there was complete stenosis of both nasal passages which caused the characteristic voice of nasal occlusion. This, upon inspection, appeared to be due to thickening and infiltration of the turbinated bodies and septum; they were in contact about one fourth of an inch from the anterior nares. Having benumbed the parts with cocaine, I introduced a probe, wound with cotton, beyond this point of contact and brought out some cheesy matter of disagreeable odor. I was unable to get a thorough view of the nasal cavities at that time so I directed her to return on the following day; then I found the œdamatous swelling somewhat subsided and saw that there was a polypoid enlargement of the middle turbinated bodies which acted as a valve to imprison the decomposing material.

This I removed with cold wire snare. And thus opened up a regular cavity on each side, from which I removed at least an ounce of foul-smelling cheesy pus. I might add that this accumulation was above the middle turbinateds so far as I could make out. As the parts were thus opened, and the discharge was enabled to make an exit, it gave rise, by running down into the throat, to a very distressing nausea. This I succeeded in relieving by daily removing these secretions and spraying the nares with a solution of peroxide of hydrogen, "Marchand," one to four of water, and a mixture, taken internally, of pepsin and bismuth; I also prescribed champagne. Under this treatment the

*Read before Ohio State Medical Society at Cincinnati, May 6th, 1892.

patient soon began to improve. She regained her appetite, the stenosis was relieved, fœtor stopped, and she began to gain in flesh and strength, and on the 4th of March I permitted her to go home, some ten miles, to report occasionally; she continued to improve until the 24th of March, when she returned complaining of obstruction in the right nasal cavity. Then I removed the last bit of decomposed mucous, which had become very much hardened; since which time she has remained well. I examined her on the 26th of April and found the nasal cavities as nearly normal as we are accustomed to see them: there was no ulceration, nor was there any perforation of the septum, or anything to suggest to one that a syphilitic process had been going on.

This case has been a very perplexing one to me as far as the diagnosis is concerned. I cannot regard it as syphilitic, as the effect of antisyphilitic remedies was of no avail, but positively hurtful, and the case got well without any of the results, such as perforation of the septum, exfoliation of bone, etc., which we should expect to result from such a severe syphilitic manifestation.

I am perfectly convinced that it was a case where the patient was taken with acute catarrhal rhinitis and as a result of the swelling of the mucous membrane, the discharge was retained and becoming decomposed gave rise to the train of symptoms occurring in the case. There might have been implication of some of the accessory sinuses, but I think that there was not to any extent at least. In looking over the literature of this subject as far as I have had an opportunity, it is surprising how little is to be found. The only contribution is from the pen of Middlemass Hunt, of Liverpool, which occurs in the journal of *Laryngology, Rhinology and Otology,* page 1, vol. 6, there under the head of "Serious Symptoms Arising from Retention of Nasal Discharge," he relates two cases. The first was a girl aged 23, who had had the trouble for a year with complete stenosis of the right nostril. Before coming under his care the case had been diagnosed as one of malignant disease. He destroyed the folds of mucous membrane which held the secretion in the nose, and "scooped out the putty like material." The case resulted in a cure. The second case was a widow aged 45. She had about the same symptoms except that the neuralgic pains were more severe. Her medical attendant had diagnosed syphilis and had salivated her without effect. The same foul smelling cheesy material was found in the nasal cavity of the right side. He adopted the same treatment except that he snared the hypertrophied turbinated valve, as it were. In his cases, owing to the length of time the disease had persisted, the fold which had obstructed the exit of the discharge had become almost the same as granulation tissue, while in mine, from the short length of time, about five months, it was mucous membrane infiltrated with serum greatly resembling true myxoma. His also differs in being unilateral, whereas, mine was on both sides. His conclusion is this, and I quote in his own words: "The sequence of events, in the above cases seem to be as follows: An acute nasal catarrh, extending to one of the accessory cavities, most probably the frontal sinus, with swelling and inflammatory hypertrophy of the mucous membrane. Leading to gradual occlusion of the nostril and retention of the discharge, which gradually filled the nasal cavity, became inspisated, and, through pressure gave rise to pain and deformity. Disease of the antrum is excluded by the cessation of all symptoms after removal of obstruction."

I wish to say that my patient was well before I saw Dr. Hunt's article, but if I had seen it sooner it would have been a great help to me as well as a relief. And now in conclusion, I wish to add that I reported this case more because I have considered it my duty than for any other reason, and I hope it will impress upon your minds that cases do occur where there may be a foul-smelling cheesy accumulation in nasal cavities without syphilis or ulceration of the mucous membrane, notwithstanding what some of our best authorities on nose and throat disease may hold in their writings.

CHLORO-ANÆMIA.

℞ Pyrophosphate of iron (U. S.)..... 1 part.
Distilled water (boiled)..... 5 parts.

Or,

℞ Citrate of iron..... 5 parts
Distilled water (boiled)..... 10 parts.

Inject the contents of a Pravaz syringe of either of these solutions under the skin of the gluteal region.

—*N. Y. Med. Abstr.*

VENTRAL HERNIA RESULTING FROM ABDOMINAL SECTION.*

By D. TOD GILLIAM, M. D.,
COLUMBUS, OHIO.

The safeguards against ventral hernia are the slippery and vaulted parietal peritoneum which continually shifts the pressure, the fascia, the interwoven commissural fibres, the arrangement of the fibres of three sets of muscles. The factors contributing to ventral hernia are a roughened and sacculated peritoneum concentrating the pressure, scar tissue which has not the power of resistance of normal tissue, and the disturbance of relations of the parietal components.

In long standing cases with large and pendulous pouch, the viscera become displaced, the mesentery prolapsed, and the cavity properly contracted. This adds greatly to the difficulties of the operation, because the cavity can no longer accommodate the viscera.

The ideal operation would be to restore a smooth, regular peritoneum, and the normal relations of the superimposed structures to enlarge the cavity and to strengthen the visceral supports. This as a rule is impracticable, and the intra-peritoneal operation is fraught with so much danger as to condemn it.

The operation of cutting down to the fascia on one side the median line, reflecting it to an equal distance on the opposite side, dissecting up the muscles from the middle line outward in both directions, overlaping and securing them by suture, is full of difficulties, and while offering many advantages over the direct median section, is not likely to come into general use.

The operation of election must be simple, safe, easy of execution and lasting in its results. A preliminary treatment is necessary to enlarge the cavity, restore the viscera and strengthen the muscles. This will consist in keeping the patient recumbent, regulating the bowels, massage, the Trendelenberg posture, and the use of remedies to combat flatulence. The utmost care is necessary to secure asepis, for the efficacy of the operation depends upon the avoidance of suppuration. The operation will consist in an elliptical denudation of an inch or more in width, around the margin of the hernial pouch, and to the depth of the fascia, infolding of the hernial pouch towards the cavity, and seried layers of buried catgut sutures so as to coapt the denuded surfaces perfectly. The dressings consist of antiseptic gauze held in place by strips of adhesive plaster anchored well down on the sides and tied with tapes over the median line. Over all, the cotton pad and flannel bandage.

*Abstract of paper read before Ohio State Medical Society, May 6, 1892.

ECLAMPSIA AND SEPTICÆMIA.

Loviot (*Nouv. Arch. d' Obstét. et de Gynéc.*, November, 1891, Supplement, p. 482) describes a highly-complex labor where the patient was saved after extreme complications. She was a primipara, aged twenty-seven. Loviot found her in labor at term, and very badly nursed. The first twin presented at the breech; the forceps were applied and it was delivered. Then the patient was allowed to rest for an hour, the pains being very feeble in the meantime. The head presented, the membranes were ruptured, the forceps applied, and the child safely delivered. The twins were males and both alive; there were two placentæ. The patient's previous medical attendant had detected a great quantity of albumin in the urine. Antiseptic solutions were injected. Three hours later the patient had a fit. She was not treated with care; delirium set in and when Loviot was called in, two days and a-half after he had delivered the child, he found her temperature 105°, liquid motion pouring away from the bowel, and fœtid lochia discharging from the uterus. A large slough involved the vulva and a tract of the vagina. The slough was scraped away, several litres of solution of sublimate (twenty-five centigrammes to a litre of water) injected into the uterus, and the raw surfaces powdered with iodoform. The vagina was drained with iodoform gauze. The next day the curette was applied to the uterus, which was drained with the same dressing. At the end of the third week there was slight phlebitis in the right leg, which lasted six days. The patient shortly afterwards left for the country, her health being perfectly re-established, excepting that the urine contained a trace of albumin.—*Brit. Med. Jour.*

INFANTILE PARALYSIS.*

By D. R. BROWER, M. D.,
CHICAGO, ILL.

Polio-Myelitis Anterior Acuta, Essential Paralysis of Infancy or Acute Trophic Paralysis of Childhood is an affection of the spinal cord characterized by a sudden febrile onset, often-times with general convulsions and a paralysis of variable distribution, with a rapid atrophy of the paralyzed muscles, and an absence of sensory disturbance and of disorder of the functions of the rectum and bladder.

Its causation is involved in mystery; while it does sometimes occur in adults, yet it is essentially a disease of infancy, cases occurring most frequently between the ages of six months and four years. There does not seem to be any well marked heredity, but it has an ætiological relation to the seasons of the year, occurring most frequently in the summer months. Dr. Sinkler, of Philadelphia, in an examination of a great many cases, determined that four-fifths of the cases occurred during the hot months.

Traumatic influences have been supposed by some to have an important causal relation. The acute febrile affections not infrequently have preceded the development of this disease.

There is no proof that the disease bears any relation to the processes of dentition. The rapid functional development of the nervous system between the periods of life in which it has its greatest frequency, having probably more to do with its development at this time than any physiological process of the body.

Symptoms.—The clinical history of the affection divides itself into four periods: *First*, the period of invasion, which lasts from a few hours to a week; *second*, a stationary period, which lasts for a week or a month; *third*, a stage of regression of paralytic phenomena, lasting from one to six months, and, *fourth*, a chronic stage of an indefinite duration. The period of invasion begins usually with febrile excitement, the temperature reaching 103° or 104 deg., and sometimes 105 deg. Convulsions occasionally attend the onset, especially in young children; there is more or less pain in the back; vomiting and diarrhœa are not infrequent accompaniments; indeed, this onset presents constitutional disturbances very much like the ordinary febriculæ of childhood, and I know of no means by which its differentiation can certainly be established. I think if we are called to see a patient in this stage of the disease we will very rarely, if ever, apprehend the cause of the constitutional symptoms, but in a day or two the child will be found to be paralyzed in some muscles, or groups of muscles. This paralysis is always rapidly developed; only a part of a limb may be affected, or both arms, both legs, or a leg and one arm may be paralyzed.

The amount of paralysis found to be present in this, the second stage of the disease, always reaches its maximum almost immediately—it possesses no progressive character. The sensibility is almost entirely undisturbed throughout the whole progress of the disease; at the very onset they may complain of pains, but these painful symptoms are of short duration. Reflex function, superficial and deep, is abolished in all the muscles that are paralyzed. The functions of the bladder and rectum usually escape involvement, except during the first few day there may be trouble with both these organs, but whatever disturbance there is in these functions after a few days disappear.

After a certain time the period of regression begins during which the paralysis disappears, except from certain parts in which atrophy occurs. There are certain cases in which recovery may be complete and it has been proposed to call these cases temporary spinal paralysis, but as a rule a certain number of muscles undergo very rapid recovery.

The temperature of the paralyzed limbs is lower than the corresponding sound one, the difference usually being several degrees. The sensibility of the skin of the paralyzed limbs is not impaired. These atrophied muscles will not respond as a rule, to Faradic electricity, but usually do respond to interrupted galvanic currents of sufficient degree of intensity. During this period of atrophy there is arrest of development in the osseous system so that the limb gradually becomes shorter than its fellow, and the difference in size increases with the amount of general growth, hence this difference is greater

*Read before the Illinois State Medical Society, May, 18, 1892.

the younger the patient at the onset of the disease. There is also during this stage, a great tendency to the occurrence of permanent shortening of the muscles and consequent displacement of the parts to which they are attached, deformities are thus produced. Certain muscles of the lower extremities suffer more frequently than others with permanent paralysis, and of these, the antero-external group of the leg, the long extensor of the toes, the tibialis anticus, the superficial extensor of the great toe, and the long and short perinei are those most commonly affected. When the upper extremity is the seat of paralysis, the extensor muscles of the hand are those most frequently paralyzed. Bed-sores, or atrophic ulcerations of the skin are exceedingly rare. Relapses are very rare, and second attacks are almost unknown; but a single instance of this kind has come under my observation. Occasionally, however, the disease occurring in childhood seems to lay the foundation for the development of other spinal affections later in life; lateral sclerosis, posterior spinal sclerosis and progressive muscular atrophy occasionally follow in the adult period.

Pathology.—This disease is due to an inflammation that has its beginning either in the interstitial tissue, or in the parenchymatous tissue of the anterior horns of the spinal cord, and either as a consequence of the essential parenchymatous inflammation, or as a consequence of this interstital inflammation there is destruction of the cells of the anterior horns of the spinal cord, and these cells being motor and trophic in function, their destruction results in wasting and paralysis. In some very severe cases there is a slight local meningitis. The original disturbance of function being very much greater than the amount of degeneration that has been produced, results in the clinical fact that the paralysis immediately following the onset is very much greater than that which is to be present after a few days. The probability is, that this inflammatory disturbance has its origin in the presence in the blood of some pathological germs.

Diagnosis.—As already stated, it is almost impossible to make a diagnosis in childhood of the invasion period; the differentiation of the paralysis depends upon the fact that the atrophy is rapid, that the temperature of the limb is below normal, that there are no sensory disturbances, and the bladder and rectum perform their functions normally.

Prognosis.—Occasionally children die in the acute onset, doubtless without the precise cause of death being determined; beyond this there is no danger to life. The prognosis as to recovery is to be based upon the condition of the paralyzed muscles; if the muscles have not lost their electrical irritability, then there is hope of recovery to a greater or less extent, but otherwise, the prognosis as to recovery is absolutely unfavorable.

Treatment.—The treatment of the acute stage of the disease consists in the administration of antipyretics: Antipyrin, bromide of sodium, salicylate of sodium and ergot, if the disease can be recognized in this stage. When the acute stage is over, then the tonics are indicated, iron, quinine and strychnia in the beginning, cautiously. In some cases cod-liver oil and the syrup of hypophosphites are extremely useful. The most important agent in the treatment of this affection is electricity, and the constant galvanic current should be used as soon as the fever has subsided, and should be made to pass through the seat of the lesion in the cord. The electrodes used should be large, and the current should be mild and its duration should be five to ten minutes. At a later period of the disease, when atrophy of the muscles has set in, the interrupted galvanic current should be used to the paralyzed muscles, of the least strength that will produce muscular response, and each paralyzed muscle or each group of muscles should be made to respond to this electrical stimulus not more than once or twice at each seance. As the muscles improve in tonus, less strength of current will be necessary, and after a time the muscles respond to the Faradic stimulation.

The electricity should be applied by the physician in person, much of the want of success in the treatment of this disease being due to the non-observance of this rule. It is a common experience for me to be consulted by the friends of these patients and when I advise the use of electricity to be told that they have been using it, and it has been of no value; and upon further investigation find that they have themselves been applying the current from a Faradic battery, that was incapable of producing the slightest muscular reaction. It is the rule that the Faradic current will

not produce muscular response, hence its use under such circumstances even by the physician is useless.

Along with the electricity there should be used massage of the paralyzed limbs, and if the nutrition of the muscles does not improve under the stimulus of electricity and massage, then stimulating applications may be made to the surface of the limb, and for this purpose we prefer to use the capsicum plaster; placing around the paralyzed limbs strips of plaster about from ½ to ¾ of an inch in diameter, which are to be worn for two or three days and then renewed, and if after a reasonable space of time, the limbs do not improve under this treatment, then I advise the use of deep injections of strychnine, preferring the nitrate of strychnine as less irritating, using full dose, and giving one injection every day.

This treatment must be persisted in for months, even though but little if any improvement is at first noticed, but even the most unpromising cases will occasionally yield to the treatment if perseveringly pursued. The occurrence of deformities will require appropriate surgical treatment, but should not cause us to stop the use of remedial measures. During the progress of this treatment, the child should be encouraged in every possible way to use the paralyzed muscles, and, of course, every possible attention should be given to the hygiene of the patient, for that condition of living that results in the best general vigor, will be of the most service in correcting this special disturbance of nutrition.

ICHTHYOL IN SORE NIPPLES.

Dr. Oehren (*Therapeutische Monatshefte*, No. 2, 1892) recommends ichthyol in the treatment of sore nipples, and according to the following formula:

℞ Ichthyol.....gms. 4 (℥j).
Lanoline.....
Glycerine..... aa gms. 5 (℥ij).
Olive oil.....
.....gms. 10 (℥iss).

The advantages of this salve are: One application causes the terrific pains to disappear, the fissures quickly heal, without it being necessary to wean the child or to use a protective cap. The consistence is such that it is easily washed off after being applied, and at the same time the salve contains nothing that will harm the child.

Society Reports.

CLINICAL SOCIETY OF LOUISVILLE.

Stated Meeting, June 7th, 1892.

The President, Dr. P. Guntermann, in the Chair.

FREE DRAINAGE IN PURULENT PLEURITIC EFFUSION.

Dr. J. M. Krim: In substantiation of the belief in free drainage, I simply want to exhibit a case upon which this was practiced, the patient suffering at the time from purulent pleuritic effusion. I further wish to state that I believe this is the only reliable mode of treatment in all such cases. This girl when seven years of age had an attack of typhoid pneumonia, and about four or five weeks after she was convalescent from that trouble, the left side of the chest began to bulge and swell, with difficult respiration, which continued until it made a considerable bulge right where you see the scar. It was then opened and a small drainage tube inserted, which was allowed to remain for six months. She had some fever and rigors occasionally, but not to amount to anything. The patient is now in very good health, except that there is a little dullness on percussion over that side. She is now about fourteen years of age, and the menstrual function has been established.

Case No. 2.—This is also a case that passed through a siege of pleuro-pneumonia, of about five weeks' duration. About four weeks after he was taken with pneumonia, there was considerable bulging of the right side, with difficulty in respiration, temperature varying between 100° and 103°, and more or less cough. After the respiration began to be more impeded, I used the aspirator and drew off about a pint and a half of dark greenish purulent substance, which gave him considerable relief. In about two weeks it had again filled up and another aspiration was done, and about a half pint of liquid drawn off. In about three weeks it commenced filling up again, cough became more severe and one day in stooping down the abscess broke into the broncha, and he expectorated a great quantity of the material. I intended to put in a drainage tube on No-

vember 10th, and the abscess burst on the 9th. Patient has improved ever since. It was about nine weeks after the first aspiration before it burst.

CASE No 3.—I am sorry that the subject of this case was not able to be present this evening. The patient is a young lady aged twenty-two years whom I saw about the middle of October last suffering with an acute attack of rheumatic trouble. All the large joints were involved, and she had been sick about two weeks before I saw her. I made a thorough examination, found she suffered with mitral regurgitation in addition to the rheumatic trouble, and she told me she had suffered with heart trouble since the first attack of rheumatism about ten years ago, which has occurred every two years since. Two weeks after she came under my treatment, I found there was considerable œdema on the left side with impaired respiration and complication of the pleura. I thought it was possibly due to some conditional heart trouble. I put her under treatment with salicylate of soda with the hope that it would remedy it, but the side continued to enlarge. I used the aspirator and drew off about a pint of fluid; it was not a purulent matter however, just a plain pleuritic effusion. She recovered from this and about six weeks afterward the right side began to get large. I called Dr. Bailey in consultation and he thought it was probably due to effusion. We used the aspirator and drew off about a pint and a half of purulent substance; it filled up again in about three weeks, and I then used a large trocar inserting a drainage tube through the canula after withdrawing the trocar. The tube remained in about two months draining off everything, and she fully recovered. I cannot understand why it should have been simply pleuritic effusion of the left side, and purulent on the other side.

CASE No. 4.—This is a case of tubercular origin. I saw the patient for the first time in March, 1890; there was consolidation of the right lung, temperature varying between 101° and 103.5°. About three months later he had a slight hæmorrhage, from which he made a fairly good recovery. In May, 1890, there was considerable œdema on the right ride; he was aspirated and about a pint of dark greenish purulent sub-tance drawn off. In about three weeks we had to aspirate a second time. On the 3rd of July, last year, we made a resection, taking out about an inch of rib, removing about half a gallon of the purulent material, and the discharge has continued ever since. He is now gaining in flesh and is looking better than he has for quite a while. There is not much tube inserted now, about half or three-quarters of an inch; the opening is gradually closing up; he does not have any hectic condition. I had the discharge examined microscopically and chemically, and the results showed that it was tubercular trouble. The patient is now twenty-six years of age; two sisters have died with tubercular trouble; both father and mother are healthy. You will notice in walking he has a peculiar gait, slightly favoring the right side.

CASE No. 5.—There is another case that I want to report, that unfortunately died. It is a case of diabetes; patient had been suffering about six months before I was called. An examination of the urine revealed about ten per cent. of sugar. He had been voiding about six to ten pints of urine in the twenty-four hours. His right side was considerably œdematous, breathing difficult, hectic condition, etc. I aspirated him and drew off about two pints of fetid, dark, bloody looking liquid, and it filled up again in about two weeks. I then used a trocar, inserting a small drainage tube, which gave him considerable relief, but unfortunately the man died in the course of about ten days after drainage was put in, I suppose from gangrenous condition of the lung. I simply wanted to make the statement that I would substantiate all those who advocate free drainage. After the diagnosis had been thoroughly made, I certainly would not attempt a second inspiration, but would use free drainage. It might be modified sometimes, and instead of making a resection, introduce a trocar and rubber tubing through the canula.

DISCUSSION.

DR. T. SATTERWHITE: I would like to ask Dr. Krim what kind of a tube he used in the first case he presented.

DR. J. M. KRIM: I used a plain rubber tube. It was open about six months, and discharged I suppose about ten ounces when opened.

DR. J. A. OUCHTERLONY: Referring to the case of tubercular trouble exhibited by Dr. Krim, I would like to enquire if

there were any tubercular bacilla in the sputa before the operation.

DR. J. M. KRIM: Yes sir, all the characteristics of tubercular trouble. The discharge, however, did not have any fetid odor until the last couple of months.

DR. J. A. OUCHTERLONY: What is the patient's temperature at the present time?

DR. J. M. KRIM: Temperature is about 99°, sometimes a little more, then again normal.

DR. J. A. OUCHTERLONY: Have the bacilla disappeared from the discharge now?

DR. J. M. KRIM: No sir, they have not.

DR. T. SATTERWHITE: I would like to ask if the patient has any cough at this time.

DR. J. M. KRIM: He has some cough, principally in the morning, and some little expectoration. The discharge is very slight during the day, increasing at night when the patient lies down.

Dr. J. A. OUCHTERLONY: I regret very much that I did not hear report of the other cases but the one I was fortunate enough to see is certainly exceedingly interesting, and it suggested to my mind some points concerning the combination of pleurisy with pulmonary tuberculosis. We are aware that pleurisy in connection with tuberculosis is quite common, and I would mention in passing that when it does occur, save in the form of plastic, it is generally of a suppurative variety. Under such circumstances not only is it good practice to do as Dr. Krim suggests, to open the pleural cavity and establish drainage, but it seems to me that it affords most excellent opportunity for bringing the anti-tuberculosis treatment to bear in a manner that cannot ordinarily be done, attacking the disease by means of copious washing out with carbolized solutions. I think we should continue to wash out the cavity under such circumstances with carbolised solutions of the proper strength, as long as any remains of the cavity exists. That there are tubercular processes going on in the pleuritic cavity, as well as in the lung itself, is proven by the fact that tubercular bacilli were found.

As to removing a portion of rib in tubercular pleurisy—I do not know that it is entirely free from objections, because it may lay the patient liable to danger of infection of the ribs with tubercular bacilli. My preference in a vast majority of cases of suppurative pleurisy that I have seen would be decidely in favor of using a large rubber tube. Indeed, I have not had a case in my practice within the last ten or twelve years where it has been necessary to resort to the exsection of a rib. I devised a self retaining rubber tube much larger than the largest trocar, by means of which the opening can be kept as fully pervious as desired, and affords a most excellent opportunity for washing out the pleural cavity. The ordinary soft catheter used I do not think sufficient, as a rule, and it has the disadvantage that there is always a possibility that the catheter may slip into the pleural cavity. Such accidents have occurred in a number of cases, and have necessitated the performance of an operation of some magnitude in order to correct them. The tube I have devised has a flange which prevents it from entering the cavity.

DR. J. W. IRWIN: The remarks made by Dr. Ouchterlony seem to be about all that can be said upon the subject. With reference to the operation for removal of pus from the pleural cavity—several years ago I had made by Mr Armstrong an instrument for entering the intercostal space, which is quite narrow. It is very hard to get a canula of suitable size between the ribs. I had made a flat canula and trocar so that I could insert it between the ribs by elevating the elbow as far as it could be elevated, and in that way could get free drainage of the pleural sac very much easier than by ordinary means of aspiration, and I subsequently as Dr. Ouchterlony has just said, inserted a rubber drainage tube allowing it to stick out far enough so that it could not be drawn into the chest.

Now, as to the method of washing out the chest in consumptives—I have had considerable experience in that. I remember one case that I will mention briefly: The patient was a large fleshy man, (in the employ of a brewery), who had inherited consumption, and during the first year of the disease, he developed quite a sac of pus in the pleural cavity and it became necessary to evacuate it. I evacuated it in the manner described, and injected every other day from a pint to a quart of carbolized solution, 2½ per cent. of pure carbolic acid, into the cavity of the chest. He improved for a while very rapidly, and it seemed that

he would get well, but gangrene set in and he became rapidly worse and died. In another case that came under my observation, I used a three per cent. solution of tincture of iodine, injecting from a pint to a quart—it took that much to wash out the cavity—the same results followed as in the case mentioned. In both instances the washing seemed to produce a decided improvement for a short time, but subsequent results hastened death.

Dr. T. Satterwhite: Referring again to the first case exhibited by Dr. Krim: I notice that the opening was made rather high, and think it would have been beneficial if an incision had been made lower so as to have used a syringe from above downward. However, the results show that the child made an excellent recovery. I remember a number of years ago, a child about nine years of age had a very excessive effusion and I made a silver tube with a flange which was inserted and the cavity washed out regularly for two or three months. The child had the most excessive curvature of the spine that I have ever seen, resulting from collapse of that side, but by practicing inflation of the lung it evidently broke up the adhesions and and the curvature entirely disappeared. The second case reminds me of one that I saw some time ago in connection with one of the members of this society: There was very considerable fullness of the right side of the chest, the lower half or two-thirds. A portion of the rib (probably about two inches) was trephined expecting fully as soon as we did so, that pus would gush out, but no pus came. We concluded that we ought to put in a drainage tube but were at loss to know exactly what course to pursue. The next morning there was a very free discharge of pus, I suppose about two or three pints. My idea was that there was no effusion, but that it was an abscess of the lung. There was complete dullness, we could hear no respiration at all in the lower part of the chest, and there was also bulging so we diagnosticated pleuritic trouble. It came on in the way that these pleuritic effusions usually come.

Dr. W. T. Dulaney, (of Bristol, Tenn.):—I have had a little experience with this character of cases, not a great deal, but what I had came thick and fast. I had three cases within eighteen months about the year 1885; one was a very remarkable case, and illustrates the importance of washing and drainage. I will report them briefly:—The first subject was a young man about twenty years of age, very stout and vigorous previous to the attack to which I refer. About the first of January, 1886, he danced all night and soon after took a trip by rail and was subsequently attacked with what his physician (a very good one) called pleuro-pneumonia. I was not called to see him until May—found him suffering with general anasarca, very much swollen all over, could not lie down, breathing was very rapid, pulse over 140, left side of chest filled with fluid, and he was depending upon one lung for respiration. I did not have an aspirator at the time, but relieved his general œdema by puncturing his back, legs, etc., and in a day or two it all drained out. He was then in such condition that I could make a more thorough examination. We aspirated him about the eighth intercostal space behind, and drew off about eight pounds of pus having a sort of muddy appearance. Of course there was immediate relief from the distressing symptoms, pulse came down to normal in less than twenty-four hours. In two weeks, he was as full as ever; we operated again drew off this time about nine pounds of pus. The cavity was thoroughly washed out at each aspiration with carbolized water. Two weeks after the second aspiration he was fuller than ever; we used a trocar this time, but just as we were about ready to operate the abscess broke into the lungs and quite a quantity of very offensive pus come out by way of the bronchial apparatus. Previous to this there had been no odor about the pus whatever. We removed with the trocar about eleven pounds of pus, then inserted a small drainage tube, washing the cavity each day. In the course of two months while under treatment, we calculated that we removed from this patient about seventy pounds of pus. He made a good recovery and is now as strong and vigorous as ever, and is doing hard work as a plumber.

A short time afterward I was called to see a case that another doctor had tapped with a trocar, the patient was a little girl about two years of age, pale, thin, and as poor as anybody could be, financially—I merely mention this to show the surroundings. We used the trocar and drew off quite a quantity of pus and washed it out

thoroughly with carbolized water. The child made a good recovery.

The next case was a boy about eight years old, who had an abscess very low down, in fact, so low that I thought it possibly might be some hepatic trouble. It was on the right side. This child had always been in the habit of having his own way, and would not have it opened for about eight months, but it was discharging a little. The little fellow had become very much reduced, and I did not think he would ever get well. The abscess was opened in front, thorough drainage established, washed out with carbolized water every day, and the patient made a good recovery.

I regarded the first case as a very interesting one on account of the quantity of pus removed. The heart was dislocated, as far to the right side before the operation as it should be to the left in the normal state.

Dr. W. O. Roberts: I have had quite a large experience in the treatment of empyema; have seen only one case of true empyema die after drainage was established. That case occurred in the city hospital and was doing well, when a case of erysipelas was brought into the hospital, and this patient among others became affected and died. In the majority of my cases the trouble has been on the left side. I have seen two cases in which there was spontaneous opening, and in each case it occurred high up in the region of the nipple and would only drain, of course, when the fluid reach a level with the opening, or the patient would lie down. I operated upon one of these patients a few weeks ago. He was a graduate of the University. In this case the empyema was on the right side. An opening was made in the seventh intercostal space, and he recovered without an untoward symptom.

In regard to the removal of a portion of ribs—my rule has always been whenever I can insert my little finger between the ribs, and that is, when there is sufficient space to admit of the introduction of a large sized tube, no interference with the ribs is necessary. But where this cannot be done it is then necessary to remove a section of rip. As to the use of the aspirator, I think the cases reported this evening prove the folly of attempting to treat or cure these cases by use of the aspirator. They invariably refill. The aspirator, I think, is only of use as a means of diagnosis. I believe an opening ought to be made just as soon as pus is discovered. Another point of great importance is the washing out of the chest: The weight of authority is against washing out the pleural sac, unless there is evidence of fetid discharge. As long as the discharge is sweet, it is not necessary to wash out the chest. There is a great deal of danger in washing the pleural cavity when you distend it to any great degree. A number of cases of sudden death have occurred from over-distension of the pleural sac. A point of considerable importance in the treatment of these cases after a tube has been introduced, is the use of an abundance of absorbent gauze, (not cotton but gauze) so that every particle of discharge may be absorbed as soon as it comes to the mouth of the tube. Recovery in many of these cases is delayed by neglect of this provision.

Dr. J. A. Ouchterlony: One reason for using the aspirator is to get immediate relief, when the patient is suffering with great interference either of respiration or circulation.

Dr. J. M. Krim: Concerning resection of the rib—I cannot see anything wrong about this. In all cases that I have treated and others that have come under my observation, I have never seen any bad symptoms or results from resection; still, I am inclined to do just as Dr. Roberts states, and as before mentioned by me, if you can introduce in the intercostal space a large sized trocar and so establish drainage, it might sometimes be preferable to pleurotomy. But I do believe where there is no chance to get a good sized trocar in between the intercostal space, that resection is not going to do any harm.

In regard to washing out the cavity:—In none of the cases I reported to-night was there any washing out done, except in one or two instances where the discharge had become offensive. As long as there was no fetid discharge the cavity was not washed, and all the patients improved very nicely.

Dr. J. A. Ouchterlony: My remarks were especially in reference to the last case exibited by Dr. Krim, which is a case of tubercular suppurative pleurisy. I do not think there can be any doubt that having tuberculous fluid flowing over the porous

structure of the rib, lays it liable to tuberculous infection.

Dr. W. O. Roberts: When it becomes necessary in tubercular trouble, to remove a portion of rib, would it not be a good idea to have the ends of the bone cauterized with the hot iron?

Dr. J. A. Ouchterlony: There is one objection to the removal of a portion of rib that I have noticed very frequently—and I have seen a great many cases of pleurisy, with effusion, both suppurative and non-suppurative—it is this, new bone forms with great rapidity, and the tendency to closure of the opening is very great by the formation of bony material. I have had cases under my care where excision of a piece of rib has been made, and where the opening has been reduced to a minimum in a very short time. With me the point has always been whether it was not better to resort to the least severe operation if it will do; of course, if it is not adequate to meet the indications of the case, why then remove a piece of rib by all means.

Dr. W. T. Dulaney: Last fall a young man, conductor on a freight train, in Virginia, was shot by a tramp. I saw the patient about six weeks afterward and found the ball had entered at about the seventh intercostal space in front; there was general dullness all over the left side of the chest; he had no bloody expectoration and no cough, nor had there been any, but there was a little bulging at about the tenth rib behind. After consultation with the attending physician, Dr. Butler, we decided to make an incision there and when we reached the cavity, there was a gush of fetid pus, and serum, I suppose about two pints, and, upon enlarging the incision we found that the tenth rib had been broken by the ball passing through it, about two inches from the spinal column. While examining the wound as the pus and serum came out, the hole suddenly became plugged with a substance which looked like dead cellular tissue, or lung. I took hold of it and pulled out quite a quantity of the most offensive material that I have ever seen; it looked to me very much like dead lung tissue. About a double handful of it was removed. We found the ball just outside of the rib deep under the muscles of the back. The patient in the meantime had considerable fever. The wound was thoroughly washed out and the patient put to bed. In a day or two in giving him an enema, we were greatly surprised to see the water come out at the opening in the back. I had some doubts about this being the water used in the enema, so we used some colored water which also came out through the hole. The fever went down and the patient slowly recovered. He had fecal discharges from the opening for two or three months, and especially if they were fluid. The opening finally healed, and the man recovered though with impaired strength and diminished capacity.

Dr. W. O. Roberts: I would like to ask Dr. Dulaney if the material removed was a solid mass.

Dr. W. T. Dulaney: It may have been the result of hæmorrhage at the time the shot was received; it was a speckled mass looking like cells of the lung, in fact it looked like dead lung tissue. The hole was plugged up completely and we kept pulling out piece after piece of the offensive material, and, when we found the fistula, I did not know what was going to become of it. When the fecal discharges were a little thin or fluid, it would just pour out of the hole. I suppose it was the result of some inflammatory adhesions of the transverse colon to the diaphragm, which sloughed through.

DILATATION OF RIGHT SIDE OF HEART, WITH VALVULAR INSUFFICIENCY.

Dr. J. W. Irwin: I want to speak of a case that came to my notice some days ago. A man, a poor looking individual with a hospital shirt on, came into my office one day puffing and blowing, and said he wanted to be examined. He was forty-years of age and evidently had been an Irish laborer. He gave the history of having been at work for the Western Union Telegraph Co., raising a telegraph pole, and while doing so a spike pole that was resting against the telegraph pole with the spike end up, fell on his head striking on the upper portion of the occipital bone, producing some contusion over that region, and considerable swelling but no fracture. There was no laceration of the scalp and the injury did not give him much inconvenience as he continued at work for twelve days. He had some dull pain in his head and some little pain in his chest about the upper and middle third of the sternum; he also complained of some pain

in the region of the heart, of a dull aching character, but not continuous. There was no loss of appetite nor sleep; his digestion was good and when resting he felt comparatively strong. At the end of twelve days the pain in the head grew worse, and he then applied for admission to the city hospital. This occurred, I think, as nearly as I can remember, about the first of October, and he remained in the hospital ever since. On walking about, taking any considerable exercise, his face and lips would become of a purplish color, the veins in the face and neck becoming immensely enlarged, in fact the jugular veins appeared to be one inch in diameter. There was no pulsation nor murmurs in the veins. The veins over the sternum and over the chest were also greatly enlarged. One vein extending from the right inguinal ring to the axillary and sub-scapular veins was very much enlarged and tortuous. Some of the veins in the lower extremities were also enlarged, some of them varicosed. When the patient stooped over, his face, hands, arms, finger nails, and palms became purple in color. When standing erect the face became quite blanched, and the veins normal in size. His pulse was strong and full when standing erect, put when stooping forward the pulse grew very feeble on both sides. When in a stooping position or upon any exertion, he had considerable dyspnœa. He had a hacking cough without any expectoration; he complained of some dull headache at times, which was made worse by stopping over. Exertion also caused his head to ache. I examined the chest by percussion, found increased dullness over the region of the heart, extending pretty near to the ensiform appendix of the sternum. The sound of the mitral valves was short and sharp and heard a little toward the right of the left nipple. When stooping forward the sounds on both sides became muffled, and a faint blowing sound could be heard on the right side. There was no evidence of aneurism. Pressure over the region of the liver caused enlargement of the supra-clavicular veins and also the vein entering the inguinal ring that I have mentioned. The man is not strong, that is, he is physically strong enough, but on taking any sort of exercise he pants for breath. Food improves his condition very much. In other words, in half an hour after dinner he seemed much better, he could walk or stoop without causing any dyspnœa. I gave him two ounces of whisky which had the same effect on him as food. It was evident that both the food and whisky increased the power of the heart's action. I will state here that he gave the history of not being an intemperate man, he took a drink occasionally, said he had been a laborer for thirty-six years. He had never done any very hard work, and to use his own expression, had "never abused himself in any way." Never had any venereal disease. I diagnosticated dilatation of the right side of the heart with insufficiency of the tricuspid valves. Time will not permit my going into differential details. I wish further to say that I had his urine examined and found it to contain a small amount of albumin, but no casts. There was slight œdema about the eyes and ankles.

CASE OF SPINAL INJURY.

DR. W. O. ROBERTS: I saw a man day before yesterday, a laboring man, thirty years of age. Last August he was loading a wagon with logs, the wagon was at the time about half full. He says that he was about eight or ten feet from the ground, while standing on the wagon pulling a log up with some kind of rope attachment, the rope broke or gave way, and he fell backward striking on his shoulders; was insensible for only a few minutes. He said when he came to himself he found that he had lost all muscular power of the body, from the neck down. He was seen some little time afterward by a physician and upon examination it was found that he had not only lost all power of motion but also of sensation, from his neck down with the exception of his shoulders and arms. He has remained in about the same condition up to the present time. He can raise his arms up, bend his elbows, but cannot bend his fingers. He has sensation in his arms, also upon his body on a level with the lower boundary of the axillary space; below this point there is no sensation and no motion. There has not been at any time any ecchymosis or local evidence of contusion or mark to show where he struck the ground. Urine runs from him as fast as secreted; he has no control over bowels; when he has diarrhœa it just trickles from him all the time, and when his bowels are constipated, the nurse has to take the fecal matter away with the

fingers. His intellect is as good as it ever was.

Upon examination I could find no deformity whatever about the spine; between the seventh cervical and the first dorsal he is sensitive to the touch, but not nearly so much so as he was shortly after receipt of the injury. He has four large bed sores, his legs at first were perfectly straight and helpless, but for three or four months the muscles have been contracting until now there is marked flexion at the knee and at the hip, and it is impossible to straighten the legs. Before this occurred he says that there was considerable œdema in both legs; there is no evidence of that now, in fact his legs are very much shrunken. It is a question in my mind as to the nature of the injury, and as to the advisability of an exploratory operation to see whether or not there is any fracture of the lamina and if such can be found, whether its removal or elevation if depressed, would be of any benefit to him. There has been no priapism.

SYPHILITIC ULCERATION OF THE RECTUM.

Hahn (*Deut. med. Woch.*, January 28th, 1892) reports a case of syphilitic ulceration of the rectum in a woman, aged 33; there was also widespread ulceration in the ileum. At the necropsy the mucous membrane was found to be of a blackish green color, and extensively ulcerated for a distance of 16 cm. from the anus, with but few islets of intact mucous membrane; most of the colon was unaffected. In the ileum, at about 1.5 m. above the ileo-cæcal valve, there were eleven large ulcers with thick callous edges, and at 25 cm. above the valve a narrowing of the gut extending over 8 cm. There was amyloid disease of the kidneys and spleen, and also periosteal thickenings over both tibiæ. Anterior colotomy had been successfully performed during life, and there were free evacuations through the opening. The vomiting, however, persisted, and the author would attribute this to the renal disease. Hahn belongs to those who think ulcerative proctitis (occurring almost exclusively in women) is seldom really due to syphilis. After other measures have been tried, extirpation of the rectum and colotomy alone remain. Some cases, when of limited extent, can be cured by the former procedure.—*Brit. Med. Jour.*

Selected Formulæ.

FOR HYPERIDROSIS.

For the treatment of hyperidrosis in general, and for sweating of the feet in particular, Brocq (*Jour. des Maladies Cutan. et Syph.*, April, 1892) believes that the following drugs are of service:

℞ 1. Naphtol..... 5 parts.
Glycerine..... 10 parts.
Alcohol..... 100 parts.
M. Sig.—Apply locally twice a day, after which a powder composed of two parts of naphtol and 100 of starch is placed between the toes.

℞ 2. Permanganate of potassium.... 3 grammes.
Talc..... 40 grammes.
Subnitrate of bismuth..... 45 grammes.
Salicylate of sodium..... 2 grammes.
Rice powder..... 60 grammes.
M.

Or,

℞ 3. Permanganate of potassium....10 grammes.
Talc..... 5 grammes.
Subnitrate of bismuth..... 85 grammes.
M. Sig.—Either powder to be applied every morning.

℞ 4. Sulphate of quinine..... 8 parts.
Alcohol at 6°..... 100 parts.
Tannin..... 1 to 3 parts.
Alcohol at 50°..... 250 parts.
M. Sig.—Apply after the feet have been washed, to be followed by this powder:

℞ 5. Salicylic acid..... 3 parts.
Starch..... 10 parts.
Pulverized talc..... 87 parts.
Pulverized alum..... 45 parts.

℞ 6. Perchloride of iron..... 20 grammes.
Glycerine..... 10 grammes.
Essence of bergamot..... 20 drops.
M. Sig.—For two days previously the feet are to be washed with a cold infusion of walnut-tree leaves, and on the third day the above mixture is applied.

℞ 7. Tincture of belladonna..... 25 grammes.
Cologne water..... 120 grammes.
M. Sig.—Two or three frictions per day.

FOR ALOPECIA.

Quinquaud (*L'Union Medicale—Journ. des Malad. Cutan. et Syphil.*, April, 1892) recommends the following topical application:

℞ Biniodide of mercury..... 0.30 gramme.
Bichloride of mercury..... 1.00 gramme.
Alcohol at 90°..... 40.00 grammes.
Distilled water..... 250.00 grammes.
M. Sig.—The hair is cut short; then every day, after a good shampoo, the above solution is to be applied, night and morning. In the mean time frictions may be made with a liniment composed of: Balsam of Fioraventi, 100 grammes; camphorated alcohol, 100 grammes; ammonia, 5 grammes. For a general tr-atment the same author advises the administration of cod-liver oil during the first three weeks of each month, and five to six drops of Fowler's solution, per day, during the fourth week. The treatment is to be continued while the hair remains fragile.

FOR CHAPPED HANDS.

The following mixture, according to Baelz (*Med. chir. Centralb. Pharm. Post*, No. 52, p. 1137, *Journ. des Malad. Cutan. et Syphil.*, April, 1892), is of service:

℞ Caustic potassa..... 0.5 gramme.
Glycerine.
Alcohol, of each..... 30.00 grammes.
Distilled water..... 30.00 grammes.
M. Sig.—After washing the hands with warm water, the mixture is to be rubbed once every twenty-four hours.

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Leading Articles.

THE PROPHYLAXIS OF PUERPERAL FEVER.

Dr. J. Veit, is one of the most recent numbers of the *Berliner klin. Wochenschrift*, essayed to answer this question in the following sentence: "In spite of the value and usefulness of antiseptics, the percentage of women dying from puerperal infection remains high even where no operative procedure has been undertaken; it must, therefore, be concluded that the too frequently resorted, to internal examinations practised by the physician during or after labor exert a harmful effect upon the patient, and in themselves constitute the medium of infection.

Viewing the matter from a similar standpoint, already a large number of eminent obstetricians both here and abroad have raised a note of warning against unnecessary examinations of the genital tract during childbirth.

Litzmann, the German obstetrician, allows the students at his clinic only to make external examinations, finding that the slight loss of practical experience is more than compensated for by the lessening of the death-rate.

The most recent communications from the pens of Credè and Hegar are practically only repetitions of these warnings. Leopold has also come to the conclusion that internal examinations should be avoided whenever possible, and adheres strictly to this rule in his practice. He states from actual experience that the mortality from childbirth can be reduced to a minimum if internal examinations are avoided.

The *Deutsche med. Zeitung* in referring to the subject, states that in cases of normal labor internal examinations can be entirely replaced by careful external examinations, and that the former should only be undertaken when special indications are manifest.

We have touched upon this subject not only on account of its vast importance, but because it has recently been most actively discussed by our European contemporaries; for abroad, as here, it has been the practice of most physicians to make an internal examination as soon as they reach the bed-side. According to these recent investigations, during the period of dilatation of the cervix, an internal examination should only be undertaken under the following circumstances: First, in cases where the condition of the patient is greatly impaired—as in eclampsia, nephritis, fever, bad circulation, etc.; second, in cases where there are local disturbances—hæmorrhage, abnormally painful labor, or an abnormally long period of cervical dilatation; third, in cases where an external examination reveals an abnormal condition—such as the head of the fœtus over the pelvis in primiparæ, or after the rupture of the amniotic sac in multiparæ, an abnormal enlargement of the lower uterine segment, rupture, lessening of the fœtal heart sounds, or abnormal position of the fœtus.

During the period of expulsion an internal examination is only admissible under the following circumstances: First, in cases of general derangement—such as fever, bad pulse, great excitement, eclampsia, and nephritis; second, in cases of local derangement—such as delayed rupture of the amniotic sac, hæmorrhage, insufficient labor, or retarded delivery; third, in cases of an unlooked-for change in the position of the fœtus, abnormal distension of the lower segment of the womb threatening rupture, lessening of the fœtal heart sounds, and displacement of the fœtal head above the pelvis.

In order to be able to restrict the internal examination of parturients to the above named conditions, it will, of course, be necessary to submit the patient to a careful external examination, and indeed lay greater stress on the latter than is now generally done. It will also be necessary for our obstetrical clinics and schools to give their students more exact data regarding external examinations than is now generally done. This being accomplished, the results of a limitation of the internal examination of parturients will be speedily felt.

TREATMENT OF ABSCESS OF THE LIVER.

Fontan (*Rev. de Chir.*, February, 1892) holds that a simple incision is not always sufficient, even when very large, to effect a cure of hepatic abscess. Scraping of the walls of the abscess was advocated as a desirable addition to incision. The scraping, it was stated, should be done with a blunt curette, guided by the index finger passed into the interior of the abscess. Two cases were reported in support of the author's opinion that such treatment is not likely to cause any serious hæmorrhage, and that it favors rapid and complete cure. In the discussion, Pozzi, whilst granting that the method might enable the surgeon to discover and open a second abscess, said this advantage would not compensate for such probable dangers as hæmorrhage and opening of the biliary passage. Monod considered the method not only dangerous, but also useless. He quoted cases to show that incision followed by drainage would suffice to bring about a cure of the abscess. In one of these cases, however, the ultimate result was not satisfactory. After three unsuccessful exploratory punctures, a fourth made in the intercostal space revealed the presence of pus in the liver. Monod, after removing a portion of rib, made a free incision into the abscess and drainage the cavity. The condition of the patient improved for a time; but subsequently the temperature rose, the diarrhœa became more profuse, and death took place six weeks after the operation. The original abscess, which had been incised and drained, was found at the necropsy to be quite closed, but there remained two other collections—one near the convex surface, the other near the inferior surface of the liver. The presence of one or more other purulent deposits is usually the cause of failure of incision in the treatment of hepatic abscess. Unfortunately, Monod states, it is very difficult to determine the presence of such multiple abscesses.—*Brit. Med. Jour.*

Book Reviews.

DISEASES OF THE URINARY APPARATUS, PHLEGMATIC AFFECTIONS. By John S. Gouley, M. D., Surgeon to Bellevue Hospital, New York. New York: D. Appleton and Co., 1892.

The scholarly attainments of this distinguished New York surgeon have never been shown to greater advantage than in this, his latest book. Every American surgeon is familiar with the thoroughness and depth of Dr. Gouley's professional knowledge, his clearness of expression, exactness of statement, and beauty of style; and those who have valued his previous writings will read this contribution with great satisfaction. The subject is presented in its broadest and most comprehensive aspect; principles rather than technique and methods being dealt with. It may truly be said that this book is a fitting evidence of a long life of usefulness, clinical research and experience. In every page we clearly read that the author has recognized above every other consideration the paramount value of the great principles which underlie the diseases of which he speaks, and that he conscientiously endeavored to trace as definitely as our knowledge will permit the true pathological states concerned in their production. It is this admirable foundation which gives special value to his work.

The term *phlegmasic affection* is his own, and by it he means "a morbid process, one of the local nutritional changes which, when visible and tangible, is ordinarily characterized by heat, redness, swelling, and pain, and which is now believed by many pathologists to be generally caused by microbic invasion. "Another term which will attract considerable attention is *allotrylic affections*, meaning, as its derivation suggests, "morbid states caused by the lodgement of foreign substances in the organism?"

The division the author makes in the general pathology of the urinary apparatus cannot be too highly praised. It is complete in itself, and its application to special diseases of the urinary apparatus is simply perfect. No one can study too carefully this excellent chapter. It is in fact the foundation of all that follows, and if the student gets the truth contained in it firmly fixed in his mind he will have a solid basis for any subsequent pathological considerations which may logically be deduced from the principles here laid down.

Among the special considerations none is more interesting, more valuable and better prepared than the one devoted to cystitis; the remarks upon its treatment being worthy of special attention. The author is a strong opponent of infra- and supra-pubic cystotomy for the relief of chronic cystitis with contracture of the bladder. In these cases he believes that the best method of cure is by hydraulic dilatation of the bladder. Concerning this he remarks: "There is no curative power in rest and drainage of the bladder in the case of cystitis and contracture. * * * The prescription of long rest to the bladder in these cases does not seem rational, since it is well known that the prolonged immobilization of any part so surely leads to its permanent contracture. The muscular walls of the bladder need be exercised in cases of cystitis with contracture which has not become permanent, and this exercise is attainable by hydraulic expansion, which gradually restores the bladder to its normal suppleness and capacity."

In a book like this, every part of which is finished, it is useless to attempt to give more than an idea of its general characters, which has been very imperfectly attempted here. Every surgeon should read it, for we are sure that there will not be disappointment.

THE SUBCUTANEOUS USE OF IRON IN NERVOUS TROUBLES.

Rosenthal (*Pest. Med. Chir. Presse*) advises this method of administration. He has detected the metal in his own urine within thirty to forty minutes after injection. He recommends two preparations: Ferrum peptonitum, produced by adding a solution of pepsin to one of ferric chloride, producing a powder soluble in water, which is given in doses of one syringeful of a 10 per cent. solution every other day; and ferrum oleinoum, given in the same dose in a 5 per cent. solution in olive oil. The former is preferable. He recommends this method in delicate neurasthenic individuals, and in the asthenic dyspepsia often complicating anæmia, in which small doses of iron often produce severe digestive disturbances. Unpleasant effects have not been noticed.—*Deutsche Medic. Wochensch.*, No. 30, 1891.

Periscope.

THERAPEUTICS.

THE DRY POULTICE IN THE TREATMENT OF EPIDIDYMITIS.

In the *Journal of Cutaneous and Genito-Urinary Diseases*, Dr. George Emerson Brewer reports the successful treatment of a number of cases of epididymitis by the "dry poultice." This name is given to a dressing of cotton wool applied thickly over the inflamed portion of the organ and extending on to the healthy skin. This is covered with thin rubber tissue held in place by a snugly applied gauze bandage and the whole placed in a suitable suspensory. Pains rapidly subside, the inflammation disappears, and the organ returns to its healthy state.

TRANSFUSION OF SALT SOLUTION INTO PERITONEAL CAVITY IN COLLAPSE.

Johnson-Alloway (*Montreal Med. Jour.*, February, 1892) removed the ovaries of a woman, aged 42. They were non-adherent, nodular, and about the size and shape of a human kidney, stony hard, and attached to the uterus by a short pedicle. Three gallons of a dark brown limpid fluid flowed away from the peritoneal cavity. There was evidence of secondary deposit in the mesenteric glands and elsewhere. Eight hours later the patient was pulseless, restless, sighing, and almost senseless; the shallow respiration became gasping. Johnson-Alloway believed that this condition was probably due to the sudden withdrawal of a great quantity of fluid, which had removed firm and constant pressure from the heart and large abdominal vessels. He accordingly transfused about three quarts of sterilized salt solution (temperature 110°) into the abdominal cavity through the glass drainage tube inserted at the operation. The patient immediately began to scream and vomit violently. The tube was removed, and the opening closed by firm packs of cotton-wool. In about five minutes the radial pulse became full. Some hours later the abdomen was as flat as when the patient left the operating table. The highest temperature (second day) was 101.5°. The patient left the hospital within four weeks. On account of the rapidity of its action peritoneal transfusion is preferable to hypodermic injections or enemata of salt solution.—*Brit. Med. Jour.*

PILOCARPINE IN THE STATUS EPILEPTICUS.

Dr. Kernig (*La Semaine médicale*, No. 11, 1892), was called to a case of a young girl who was suffering from status epilepticus. A subcutaneous injection of two centigrammes (one-third of a grain) of the hydrochlorate of pilocarpine produced copious perspiration, followed by complete and definite arrest of the convulsions. In about an hour œdema of the lungs apparently threatened, together with collapse. Fortunately, these disquieting symptoms disappeared, the pulse rose in force and frequency, and the patient fell into a calm and reparative sleep.

THERAPEUTIC NOTE ON ALOPECIA AREATA.

Bulkley (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1892) claims for the treatment reported in this paper greater success than other methods have attained in his hands. It is the very thorough application of a 95 per cent. solution of carbolic acid to the bald areas. He makes a small cotton-wool swab, dips it in the acid and lightly paints the affected spot, afterwards gently and firmly rubbing it in for some seconds. The skin is whitened, in a day or two becomes slightly inflamed, and within a week or ten days sheds its epidermal layer. The process may be repeated in two or three weeks; and has never given rise to accident—such as blistering. No larger area than two or three square inches should be attacked at a sitting.

THE DISADVANTAGES OF HOT-WATER BOTTLES.

The custom which so largely prevails mainly among ladies of using hot-water bottles in bed for the purpose of warming their feet, time-honored as it is, cannot after all be said to have had much to commend it. Indeed, there is a good deal more which can be urged against it than can be said in its favor. Ladies who resort to the habit, for habit it soon becomes in the majority of instances, suffer from cold feet, a condition which it is needless

to say does not particularly conduce to the wooing of sleep. But cold feet is a symptom which should not be left to be dealt with at the end of the day; on the contrary, those in whom it occurs should bear in mind that in ordinary health the proper remedy for this condition is exercise. Nothing tends more to cause "cold feet" than sitting about the house all day, or reducing the daily exercise to a minimum amount, either on account of laziness or feebleness of will-power for exertion. Some persons console themselves with the reflection that they were born with cold feet, and on these grounds hold that it was always intended that they should warm them by artificial means, thus ignoring the necessity which exists for exercise. Hot bottles, too, used in this way become a fertile source of chilblains, and, moreover, are not devoid of danger. We heard the other day of two cases in which the ladies using them were seriously scalded by the cork of the earthenware bottle containing the boiling water suddenly popping out. This brings us to the consideration of whether hot bottles should be used at all, and we think the answer should be in the negative. The best way of warming cold feet at night is to clothe them with warm woolen socks or stockings, which may be slept in. By this means the temperature of the feet is gradually raised, and is equably maintained throughout the night without trouble or risk. Another useful plan is to raise the feet on a pillow about two inches above the knee, so as to facilitate the return of the blood through the veins of the limbs.—*Med. Press.*

ANTIPYRINE.

M. B. Martin, in *L' Union Médicale*, Nos. 125, p. 565; 126, p. 577; 128, p. 601, adds much to the statements of the uses of this drug as found in the treatises on therapeutics, believing that its antipyretic properties have over-shadowed others equally valuable. It is useful in hæmorrhage, in that it locally will contract blood-vessels, and, indeed, it is an antiseptic. During operations a one-to-twenty, in epistaxis one-to-five, in coryza one-to-thirty solutions are used. It is valuable in laryngeal affections (catarrhs, stridulous laryngitis), asthma, broncho-pneumonia, pleuritic effusions, when given internally. As an anti-galactogogue, ten to twenty grains, several times repeated; for incontinence of urine (should be giving at 9 or 10 P. M.), for diabetes insipidus and true diabetes (up to a drachm daily); for uterine cancer (Cheron); and in dysemenorrhœa it relieves pain. Even the pains of labor are mitigated. Exophthalmic goitre, nocturnal pollutions, pains of tubercular meningitis, hemeralopia, asthma, either essential or of cardiac origin, distress of aortic aneurism, trigger-finger (subcutaneous injection) —all have been benefited; infantile diarrhœas (Saint-Philippe); with cocaine in obstinate vomiting (Struver). Some dermatoses, as urticaria, erythema nodosum, senile pruritus, and other conditions, where exceptional benefit has been obtained, complete the somewhat extensive list. The paper closes with a statement of the accidents that may be caused by this remedy.

ACONITE FOR SCORPION STING.

A correspondent from Durango, Mexico, says that formerly about one half of the children in the city died from the sting of the scorpion, but now nearly all the lives are saved, if taken in time, by the use of the strong tincture of aconite, of which 5 or 6 drops are put in a tumbler half full of water, and a teaspoonful given at frequent intervals.—*Ex.*

ALKALIES FOR THE INFLUENZA.

Based on personal experience, Crerar, in a paper read before a branch of the British Medical Association, fervently recommends potassium bicarbonate as an unfailing remedy for the cure of influenza. The doses administered by him being 30 grains every two or three hours. The advantages of this treatment are summed up by the author as follows: "1. If used before the attack, it prevents the disease. 2. It destroys the power of the disease within twenty-four hours, generally within four or six hours. 3. The strength is conserved, and the convalescence is short and satisfactory. 4. Sequelæ are conspicuous by their absence. 5. The death rate is reduced to a minimum. I have not had any death in more than one thousand cases. 6. It has more power over influenza than I have ever seen exerted by any method of treatment over any other disease, and I have had an extensive practice for upward of a quarter

of a century. 7. If adopted by the whole profession, it would make influenza non-existent in one week. 8. It rests upon a sound scientific foundation." The last two propositions certainly are very sanguinical and rather startling.

A NEW ANTI-RHEUMATIC.

Salophene is a derivative. It is obtained by treating para-nitrophenol with salicylic acid, reducing the nitrophenol by means of zinc and hydrochloric acid into an amide, and acting upon this with acetic acid. Salophene contains about 50 per cent. of salicylic acid, and exists in the form of thin scales, tasteless, inodorous, and with a neutral reaction. It is almost insoluble in cold water, and only slightly so when warmed. Upon the addition, however, of an alkali it readily dissolves. It is very soluble in alcohol and ether. It burns with a smoky flame, leaving no residue. In the stomach salophene breaks up into salicylic acid and acetyl para-amido-phenol. These substances are excreted by the kidney, and can be found in the urine. Salophene, owing to the presence of amido-phenol, is less poisonous than salol. According to Guttmann, it is a valuable remedy in articular rheumatism, given in doses of from four to six grammes a day in pill or in the form of compressed tablets.

MEDICINE.

RECURRENCE OF CARCINOMA OF THE BREAST

Dennis (*Medical Record*, February 27, 1892), in reviewing the conditions that favor the return of carcinoma in the breast, says, twenty-five per cent. of the cases operated upon fail to recur. The recurrence is influenced by the following conditions:

(1) By the period of time from the appearance of the growth to the time of operation, and places the average time at six months, because at this time little or no infection of the neighboring lymphatic glands has taken place.

(2) By the extent to which infiltration has taken place.

(3) By the radical character of the operation. The extensive operation is suggested from the fact that Küster had examined the glands removed in 117 cases of cancer of the breast, and only two cases failed to show no invasion.

(4) By the histological character of the carcinoma itself. Tumors showing structures departing but slightly from the normal are favorable cases, and the more embryonic the structure the greater the liability to recurrence.

(5) By the appearance simultaneously of carcinoma in both breasts. This condition, however, exists only in five per cent. of the cases.

(6) By the personal factors of the individual, such as age, sex, marriage, traumatism, race, etc.

The locality of the carcinoma has a marked influence on the recurrence after removal.

More whites die from carcinoma than blacks.—*Univ. Med. Mag.*

THE PROPER COURSE TO PURSUE WHEN A WOMAN WITH SYPHILIS COMES TO CONSULT YOU.

Professor Fournier has just given in one of his remarkable lessons the line of action to follow when consulted by a syphilitic woman. This varies with the social status of the patient. If *irrégulière*, that is to say a woman who is kept or a prostitute she must be told at once the nature of her ailment so as to put her on her guard against the danger of infecting others if she persists in maintaining relations with them. If on the contrary it is a married woman the line of conduct is much more delicate. To declare rudely that she is affected with syphilis is to risk, if the husband is the culpable one, causing domestic trouble, and separation in the family. If one simply gives a prescription without saying anything, this usually amounts to nothing for she does not fail to instruct herself upon the real nature of the drugs employed and thus learns the truth. Theoretically it is better to place the burden on the husband of keeping from the wife so far as is possible the nature of the disease which she has received from him. The husband must thus be taken into the case and entrusted with the direction of the care to be taken and the carrying out of the treatment. For this reason Professor Fournier does not advise giving the patient at the first visit a prescription which could awaken suspicion. A local

treatment without mercury should suffice, the patient must be told that there are certain points in the case which do not appear quite clear, and for which reason a conversation with the husband will be necessary, or that there are certain things you wish to recommend to the husband, and ask to have him sent to see you. If the woman is innocent, that is to say if she has had relations with her husband alone, she will readily comply with your request. From this time on you have only to come to an understanding with the husband keeping as much as possible from the knowledge of the wife the real nature of her complaint. However too much secrecy cannot be expected, for after a certain period of this prolonged and mysterious medication the woman begins to suspect the truth, but the object has already been attained, scenes of violence have been avoided which in the commencement would have been precipitated by a sudden discovery of the true nature of the disease and usually regrettable separations and divorces are avoided. But to act as we have suggested we must be quite sure of our premises. We must be assured that it is from the husband alone and not from some other that the contagion has come for in the opposite case it would be the same as saying to the husband "your wife has syphilis and as you haven't it, she must have contracted it from some one else." So as not to commit such a blunder care must be taken in speaking to the husband before having the full assent of the wife. If she is innocent she will have no reason to oppose the conference, if she is guilty, that is to say if she has had relations with other persons she will without doubt take you at once into her confidence.

SUPPURATION DUE TO PNEUMOCOCCI.

R. Condamin (*Lyon Méd.*, February 7th, 1892) records a case of multiple suppuration, consecutive to a suppurative otitis, which presented characters different from those usually observed. The ear mischief developed suddenly during the course of influenza, and rapidly culminated in perforation of the tympanum, having been preceded by severe sore throat. Two days later the patient's temperature was high, and he had several rigors. An abscess developed on the dorsum of his left hand, which was opened two days afterwards. From this time a series of abscesses in different parts of the body, all subcutaneous and running a rapid course, developed. From fifteen to eighteen at least of these were observed, and in each case cultivations from them revealed the pneumococcus of Fraenkel in a state of purity. The common character of all these abscesses was their quiet development, without acute pain—in fact, they behaved after the manner of "cold" abscesses. The pus was very thick, yellow, and odorless; there was little tendency towards diffusion, each collection tending rather to become encysted. The rapidity of the disappearance of each after being opened by the thermo-cautery was most striking.—*Brit. Med Jour.*

SLOW PULSE.

Among the causes of slow pulse, Dr. D. W. Prentiss enumerates the following, saying that the causes which produce slow pulse may be classified as follows:

1. Diseases or injuries to the nerve centers, producing either irritation of the pneumogastric or paralysis of the sympathetic (accelerator) nerves of the heart.

2. Diseases or injury of the pneumogastric nerve, increasing its irritability.

3. Disease or injury of the sympathetic nerves of the heart, paralyzing them.

4. Disease of cardiac ganglia, by which the influence of pneumogastric nerve preponderates.

5. Disease of the heart muscle (degeneration), whereby it fails to respond to the normal stimulus.

6. The actions of poisons, as lead or tobacco, either on nerve endings or centers. The poison generated in salt fish.

Also the poison of certain febrile diseases, algid pernicious fever.

Another possibility is *malarial poisoning.—St. Louis Medical and Surgical Journal.*

CYSTIC DISEASE OF THE KIDNEY.

After reporting such a case recognized during life, Stiller (*Berl. klin. Woch.*, March 7th, 1892) discusses the diagnosis of this affection. Of the first importance is the recognition of a tumor of renal origin. This tumor appears clinically to be a solid one. Owing to the considerable

stretching of the capsule over the cysts no fluctuation is obtained; on the other hand if the cysts are insufficiently stretched, no tumor may be felt. Cysts in the liver not infrequently co-exist (in 18 out of Lejars' 62 cases). Fluctuation is not recognised in them even when unevenness of the liver surface can be made out. The age of the patient and the behavior of the disease is against carcinoma. The long duration of the disease almost without symptoms is against suppurating kidney such as is found in case of calculus, tubercle etc. Hydro- and pyo-nephrosis, or hydatid of the kidney, yield fluctuation. The sudden onset of uræmia and anuria in a patient previously without renal symptoms and who has a renal tumor, is in favor of cystic disease. A paranephritis may occur owing to rupture of the renal tumor. The fact of the tumor being bilateral is in favor of this disease, but clinically this is not usually recognized, although at the necropsy both kidneys are much more frequently found to be affected. The urine is usually abundant and limpid, with little albumin. The character of the urine is however only of value in the presence of other signs of the disease. The diagnosis is important, for among other things, extirpation of the kidney is contra-indicated, because the disease though clinically unilateral by far most frequently exists on both sides.—*British Medical Journal.*

NEURASTHENIA AND HYPER-ACIDITY.

The *Medicinisch-Chirurgische Rundschau* reviews an article by A. Pfannenstill of Stockholm in the *Nordiskt Med., Ark.*, on the connection between the above-named two conditions. Neurasthenia and nervous dyspepsia are, according to the writer, as frequently seen in Sweden as in other parts of the world. A valuable addition to the etiology of these complaints is that all the cases observed by Pfannenstill belonged to the working classes, so that neurasthenia is certainly not confined to the upper classes of society, who are most exposed to the excitement of modern life. Of both complaints a primary and secondary form can be distinguished; but the latter, which is merely a symptom of other affections, especially hysteria, is much the more frequent. Hysteria is more often observed in connection with a general neurasthenia, in which the functions of the secreting nerves are always disturbed, and we may find in consequence hyper-acidity and hyper-secretion, or subnormal acidity, or even an entire absence of acid. The hyper-acidity is entirely due to an increase of hydrochloric acid. Pfannnenstill considers that this hyper-acidity is the result of an increase in the quantity of the gastric juice, and not merely of the hydrochloric acid, and that there is no decrease in the power of absorption. Increased secretion of gastric juice is probably the source of hyper-acidity in other affections of the stomach, and the reverse is probably equally true.—*Lancet.*

SO-CALLED GONORRHŒAL CYSTITIS.

Du Mesnil (*Virchow's Archiv*, Bd. cxxvi., Heft 3) proves that there is no specific gonorrhœal cystitis, the presence of gonococci in urine withdrawn by catheter being due to the back-flow of pus from the urethra into the bladder. Moreover, these organisms do not cause decomposition of the urine, so that their occurrence in an ammoniacal specimen does not imply that they were the cause of the change. It is probable that the activity of the cocci is hindered, if not entirely destroyed, by the urine.

CONTRIBUTION TO THE DIAGNOSIS OF TUBERCULAR MENINGITIS.

A well-built and well-nourished man of 40 became comatose at the moment of entering the hospital on foot, and so remained until death, two days later. There was rigidity of neck and spine and total absence of reflex irritability with the exception of the knee reflex. Pulse 80, R. 32, T. 99°. A diagnosis of meningitis was made. On further examination a moderate empyema of the right side was found. The pus was found to consist of fat globules almost entirely. As F. has pointed out, this is of itself almost pathognomic of a tubercular empyema, even without the demonstration of tubercle bacilli. Cultures demonstrated the absence of pyogenic germs. Autopsy showed a most extensive tubercular meningitis, both miliary and solitary nodules being extremely abundant. Tubercular foci were found in both lungs and supra-renal cap-

SENSORY AND VASO-MOTOR DISTURBANCE IN FACIAL PARALYSIS

"Dr. Frankl Bochwart, in an investigation into the conditions present in twenty cases of facial paralysis, found that in three there were disturbances of sensation and of the vaso-motor functions, in five of sensory functions only, and in two of vaso-motor only. The sensibility was only affected to a very slight degree, and sometimes the mucous membrane on the tongue and inside of the cheek was affected, and sometimes it was not. Occasionally also taste was affected. These sensory phenomena disappeared much earlier than the paralysis, but in one case in which the paralysis persisted there was diminished sensibility even after several years. The conclusion sought to be drawn from these facts is that the facial nerve in man contains some sensory and vaso-motor fibers; but of course it would first have to shown that the fibers of the fifth nerve had not also suffered when the facial nerve became affected."—*Lancet.*

HEPATITIS PARENCHYMATOSA BENIGNA.

S. Tama draws attention (*Nederlandsch Tydschrift v. Geneeskunde*, November 14th, 1891) by a series of cases to a well-defined form of parenchymatous inflammatory affection of the liver, which as a rule runs a favorable course. Talma regards the hepatic symptoms as secondary to an intestinal lesion, the liver being infected by way of the portal or lymphatic system, the latter being the more likely path. The affection may occur at any age; its onset is always marked by severe vomiting, accompanied either by constipation or diarrhœa, and in the course of a few days, varying from one to five, hepatic enlargement and tenderness are developed, respiration becomes purely thoracic, and the symptoms increase with or without a rise of temperature (in the severe cases the temperature rose to 104° F. in two, and to 102° in two other of the recorded cases), and the patient becomes extremly weak. The diarrhœa and vomiting cease in a few days, the urine is usually dark colored, and may contain a variable quantity of bile pigment, and there may or may not be slight jaundice. The hepatic enlargement is general, though circumscribed enlargements or bosses may occasionally be detected on the anterior surface, which may be as large as a hen's egg; their presence may mislead the medical attendant into the diagnosis of cancer or even abscess of the liver. Jaundice is seldom present, biliary obstruction or suppression is rare, and ascites has never been observed. The spleen is always enlarged, but diminishes in size as the patient improves. The symptoms in the less acute cases gradually disappear in about ten days or a fortnight, and recovery is generally speedy and uninterrupted. Hepatic nodules were found in two cases. Death resulted in two of the recorded cases. In one of these (a child aged 8) the spleen was *post mortem* found to be enlarged and firm in density the mesenteric glands and the portal and hepatic lymph glands were enlarged; there were no signs of recent or old peritonitis. The liver was much enlarged and very firm to the touch (weight 3,000 grammes). On the upper surface nodules were to be seen, regular in outline, with broad bases rising gradually from and merging into the surrounding hepatic tissue; on section there appeared to be no abnormality either in the liver or nodules, which latter were of the same density as the surrounding structures. Microscopical examination revealed an apparent increase in the quantity of the inter- and intra-lobular connective tissue; the liver cells appeared normal, and careful investigation of numerous sections displayed no further abnormalities.—*Brit. Med. Jour.*

PYREXIA AND ANTIPYREXIA, NERVOUS AND ARTIFICIAL.

Richter, in the *Brit. Med. Journal Supp.* (Inaug. Diss. Breslau, 1891), gives an account of some experiments made by him on pyrexia and antipyrexia. He first of all discusses the mechanisms by which the temperature can be lowered and concludes, as a result of calorimetrical experiments upon animals in which fever had been artificially induced by the injection of infusion of hay, that fever consists in a shifting of the heat-regulation mechanism. He therefore adopts Filehne's theory of fever. The difference between a nerve temperature and fever is next discussed and the author does not believe that there is in the brain any heat center, damage of which can cause fever. He regards the pyrexia which may be brought about by

damage to the corpus striatum, as quite distinct from fever, being only a temporary disturbance of the heat-regulating mechanism.

SURGERY.

CASE OF TUMOR OF THE PONS.

Dr. P. Watson Williams (*Bristol Medico-Chirurgical Journal*, Sept., '91.) A boy, aged six years, slightly hydrocephalic had for a time been observed to be growing tiresome and fretful. Occasionally he would tumble about and fall forwards, or go around like a toy, and then fall. Subsequent examination showed the face drawn to the right, internal strabismus; pupils large and inactive; left optic disc blurred, and gait unsteady. These symptoms became more marked. The left leg at times dragged, and later became partially paralyzed. Weakness and twitching of right facial muscles appeared and paralysis of the right sixth nerve. His irritability increased and there was a steady failure in strength. Vomiting only occurred twice. Then followed weakness of left arm, and later paralysis, dribbling, exaggerated left patella, tendon, reflex, and finally death from exhaustion. On autopsy the whole of the pons was found involved in new growth, being much swollen on its anterior surface and bulging above in the fourth ventricle. Both crura cerebri were likewise enlarged by the extension of the growth and the nerves in relation with the pons distorted and compressed. The third nerves of both sides were flattened and displaced, and the sixth nerves wound round the bulging posterior border of the tumor, especially that on the right side. The tumor proved to be a typical glioma.

OPERATIVE TREATMENT FOR RAPID CURE OF DACRYOCYSTITIS.

Guaita's (*Centralblatt für praktische Augenheilkunde*, January, 1892) operation is performed in the following manner: The patient sits on a chair with his head slightly bowed forward, and held in this position by an assistant; the sac is then incised from the outside, and if there is much bulging of the skin, a small oval piece is removed, together with the fistula, if one should be present. The blood does not get into the patient's throat, as happens when the ordinary recumbent posture is adopted. One then scrapes out the entire inside of the dilated tear sac, being especially careful to remove any diseased bone met with, and having mopped out the cavity very freely with a solution of sublimate of 1 in 5,000, a bone cannula (to be described below) is inserted and the wound stitched up. The cannula is certainly a novel feature of this operation; it is made by decalcifying with hydrochloric acid, 5 per cent., the bones composing the posterior limbs of large toads, divided into the proper lengths, and hardening and preserving them in a mixture of alcohol and sublimate. The knob-like end of the bone at the joint prevents the cannula slipping into the nose too far. This procedure has given excellent and apparently permanent results in the 314 cases the author has used it in.

REMARKS ON THE TREATMENT OF TRACHOMA BY THE EXPRESSION OF THE MORBID SUBSTANCE WITH A ROLLER FORCEPS, BASED ON A SERIES OF 114 CASES.

Dr. H. Knapp, (*Archives of Ophthalmology*, Vol. xxi, No. 1.) refers to the method for the ordinary treatment of trachoma as being unsatisfactory and tedious. He gives a wood-cut of his roller forceps and describes his method of using it.

Of the 114 cases treated there were 16 cases of follicular catarrh, 64 cases of follicular trachoma, 22 cases of diffuse trachoma, 10 of cicatricial trachoma, and 2 cases of horny summer granulations.

Of the 16 cases of follicular catarrh, fifteen were cured. Fifty-four of the cases of follicular trachoma were cured, and of eight no record was given, but a cure was believed to have occurred. Of the 22 cases of diffuse trachoma, seventeen was cured, three did not report after treatment, one had a relapse, one had an attack of acute conjunctivitis six months afterwards, but no return of the granulations. Knapp states in reference to his forceps: "The newer instruments have conical pivots which dip into corresponding depressions. Tiemann & Co., proposed also to make an instrument with longer limbs of the stirrup and a set screw to remove and cleanze the pivots and sockets. At my suggestion they made the branches a little longer somewhat elastic so that the roller can be removed and reinserted."

sules, though no symptoms of Addison's disease were present. This case shows the diagnostic importance of a væteriological and microscopic examination of empyemstous matter.—*Prof. Frænkel, Berl. Klin. Wochensch.*

OBSTETRICS.

PERINEORRHAPHY DURING PREGNANCY.

Weil (*Prager med. Wochenschrift*, 1892, No. 11) reports an interesting case of laceration involving the sphincter and rectovaginal septum, in which he operated in the fifth month of pregnancy, the patient being delivered at term without injury to the perineum. He regards the operation as justifiable during pregnancy when the patient is rapidly losing her strength from diarrhœa, so that abortion is imminent, and suffers severely from the loss of perineal support. The danger of infection during labor, by reason of the communication between the rectum and the vagina, is to be borne in mind. Care during the delivery of the head, with the performance of episiotomy, ought to prevent a second laceration.—*Amer. Jour. Med. Sci.*

TREATMENT OF ASPHYXIA IN NEWBORN CHILDREN.

W. E. Forest (*N. Y. Med. Rec.*, April 9th, 1892) objects to the Schultz method of artificial respiration in infants (supplement February 28th, 1891), that is too violent, and that it must lead to great chilling of the surface, which may be sufficient to determine the death of the child. He suggests the following method:—The child is laid for an instant on its face, with the head and thorax lower than the pelvis, and quick but gentle pressure is made on the back; this is to expel fluids which may have been drawn into the air passages. The child is then placed in the sitting posture in a pail containing warm water in sufficient quantity (about 6 or 8 inches) to rise a little above the level of the heart. The water should be as hot as can be borne comfortably by the operator's hand. The left hand grasps the wrists with the palms outwards, the right hand supports the back, the head resting between the thumb and fore-finger. The thorax is placed in the inspiratory posture by carrying the child's hand upwards until it is suspended by the arms, the buttocks just raised from the bottom of the pail. Forest contends that in severe cases, in which alone artificial respiration is really required, this will not be sufficient to cause air to enter the lungs since the air cells have never been distended, and cannot be distended merely by placing the chest in the inspiratory position; his method, he maintains, enlarges the thoracic diameters to their maximum, and should be combined with direct insufflation. When the arms are raised the head falls backwards, and in this position, he says, the œophagus is closed; the operator blows into the child's mouth while still holding it in this position, and so completes inspiration; expiration is effected by lowering the child's arms until the left hand of the operator rests against the front of the child's thorax; its body is then doubled forward, and gently compressed between the two hands of the operator. The main advantages claimed for the method are that it is gentle and effectual, but especially that it provides for maintaining the body-temperature, and so favors the re-establishment or maintenance of the circulation.—*Brit. Med. Jour.*

GYNECOLOGY.

REMARKS ON THE OPERATION OF EXCISION OF THE BREAST AND ITS AFTER-TREATMENT.

Gould (*Lancet*, London, 1892, vol. i., No. 8) speaks of certain special points concerning this operation. In the matter of the direction of the incision, the author states that two considerations only should guide the surgeon. The first is imperative and has to do with the complete removal of the nipple and skin over the tumor, when that is malignant. The second is to have the cicatrix parallel to the fibres of pectoralis major. In most cases both of these objects are best attained by the same incision—one enclosing an ellipse of skin parallel with the anterior fold of the axilla when the arm is at a right angle with the trunk. It is stated that it is sometimes convenient to prolong the incision into the axilla, but never necessary, as the axilla can be readily reached from any incision for amputation of the breast. The writer

has thoroughly cleaned out the axilla in two cases of scirrhus of the breast, through an elliptical incision over the gland, the long axis of which was vertical.

When the mamma is not the seat of malignant growth, it is recommended not to invade the axilla, and even in cases of sarcoma the axillary glands are not to be removed unless affected. In cases of carcinoma, however, the glands should be removed from the axilla, together with the mass of fat in which they are situated. The intercosto-humeral nerve should be preserved.

Bleeding vessels are caught with pressure-forceps as fast as they are cut. At the conclusion of the operation the forceps are carefully removed. Occasionally one or more arteries will require twisting. A ligature is never necessary. Sponges are used only to dry the wound and are never to be rubbed over its surfaces. The less they are used the better.

The wound is to be thoroughly flushed with bichloride solution 1:2000. A continuous suture of fine chromicized catgut is recommended, each loop being caught up—the buttonhole stitch. A drainage-tube is not to be employed. The dressing should be aseptic and it should secure accurate apposition of the wound-surfaces. The author uses four layers of boric lint to lay over the wound, the margins extending an inch beyond the wound in all directions, This is held in place by strips of plaster two inches wide. Over this, gauze or wool is applied, and held in place by a roller bandage carried around the trunk in an ascending figure-of-8. The arm is held to the side by means of an ordinary chamber-towel. The towel is folded lengthwise, and between the two folds the forearm and arm are placed, the hand being just within one end. The towel is then fixed in place by pins.

During the first twenty-four hours a firm pillow placed under the arm of the affected side may relieve the usually distressing backache. After the first day the patient may be raised to a sitting position by pillows or a bed-rest. The dressing may be removed on the seventh day, when the stitches may be carefully taken out. The wound is re-dressed by two layers of sublimate gauze, fixed with collodion, and over this a light boric lint dressing held with the roller bandage.—*Amer. Jour. Med. Sci.*

DEATH AFTER INTRAUTERINE INJECTION OF PERCHLORIDE OF IRON.

H. Pletzer (*Centralbl. f. Gynak.*, May 7th, 1892) publishes the following case which occurred in Bonn last winter. A woman, aged 32, was admitted on November 10th, 1891, for retroversion and chronic endometritis. In 1881, after contracting syphilis from her husband, she had a stroke of right hemiplegia, and the right extremities retained traces of paralysis when admitted. She had borne seven children, five macerated or premature; the retaining two died when about two weeks old. On November 11th, 1891, the curette was freely used and the uterine cavity was afterwards painted with tincture of iodine; a Hodge's pessary was also applied to relieve the anteflexion. On November 16th and 18th the uterus was washed out with a 2 per cent. solution of carbolic acid, and iodine once more applied. The period began on November 20th and lasted till the 26th. The uterus was then treated every two days as before. As uterine hæmorrhage set in, it was thought advisable to inject iron. About ½-drachm of the liquor ferri sesquichloratis (which is 10 per cent. weaker than the liq. ferri perchlor. fortior *B. P.*) was carefully injected into the uterus after previous syringing with the carbolic solution. The syringe had lateral holes, and free escape of the injection was ensured by means of a Bozemann catheter. Then the uterus was washed out once more with the carbolic solution and the patient put to bed. The injection of iron caused pain at the time. Fifteen minutes later colicky pains set in. Pletzer was called back and found the patient livid, breathing, stertorously, and complaining of severe hypogastric pain. In spite of all kind of treatment the patient grew worse and died two hours and a quarter after the beginning of the alarming symptoms. An old lesion was detected in the left thalamus opticus. Small clots were found between the trabeculæ in the right heart, and soft, non-adherent clots in the pulmonary veins. A large coagulum was discovered in the right internal iliac vein. There was a distinct breach of surface on the inner wall of the uterus, with strong evidence that through it the iron had entered the veins. Pletzer refers to Cederskjold's similar case, where the uterus was in a state of subinvolution.—*Brit. Med. Jour.*

PEDIATRICS.

INVASION OF THE SUBCUTANEOUS TISSUE BY THE DIPHTHERIA BACCILUS.

In three out of four cases of diphtheria Spronck (*Centralbl. f. allg. Pathol.*, January 1, 1892) found the characteristic bacillus in the œdematous tissues round about the tracheotomy wound. After laying open the trachea in rabbits, the author inoculated it with the bacillus of diphtheria, and then closed up the wound. Œdema often appeared round about the wound, and the same bacillus was found in it. Sometimes the œdema was very extensive as if a suitable soil had been provided. Rabbits showing this œdema died more rapidly than the others. The invasion of these tissues by the bacillus is signalized by this œdema. When the trachea is opened its movements favor the penetration of the micro-organisms, and subsequent cleansing may be insufficient to remove them. The toxalbumin produced by this bacillus is more readily absorbed from the subcutaneous tissue than from the surface of the mucous membrane. The author points to the probability that a patient's life may be thus endangered, and refers to cases where death ensues two or three days after tracheotomy, and no sufficient cause is found at the necropsy.—*Brit. Med. Jour.*

SYMPTOMS PRODUCED BY ADENOID VEGETATION IN YOUNG INFANTS.

Lubet-Barbon (*Mal. de l'Enf.*, Paris, 1891, Nov., 499.), reports that in a child of one month the symptoms presented were that it could not breathe while nursing, and while nursing was frequently seized with attacks of coughing. It did not gain in weight, breathed with mouth open and had a constant muco-purulent discharge from the nostrils. In another case, a child aged sixteen months, there were difficult respiration, mouth-breathing, dryness of the lips, the face of violet hue; the respiration was noisy, hoarse, frequent, such as to closely simulate the respiration in a case of croup. The child has never been able to take the breast nor nursing bottle, but had been fed from a glass. Cough was frequent and often caused vomiting. In another case there was considerable emphysema. Four cases are reported. In all the treatment consisted of removing the growth by means of forceps of a particular model. The operation was performed at several sittings. In all complete recovery or great improvement followed.

ANTIPYRIN IN DIPHTHERIA.

Vianna (*Sem. Méd.*, March 30th, 1892), has found that antipyrin has a marked bactericidal and toxinicidal action on the bacillus diphtheriæ. He finds, first, that addition of the drug to culture media, in the proportion of 2½ per cent., renders these unsuitable for the nutriment of the microbe; secondly, that when added in the same proportion to actively growing cultures it causes their death within forty-eight hours; thirdly, the toxines are also destroyed, for cultures treated as above, and also filtered cultures, to which antipyrine is added, prove much less virulent to guinea pigs than the original cultures, animals living five to eight, twelve, fifteen, twenty, and twenty-four days, as against three days for the control. Vianna, therefore, strongly recommends the use of antipyrin as a therapeutic agent in diphtheria.—*Brit. Med. Jour.*

HYGIENE.

DISPOSAL OF SEWAGE.

The disposal of sewage is a question which has been to the fore for a good many years in various countries, says *Engineering*, but which, perhaps, nowhere on the Continent has been dealt with in a more systematic manner than in Germany. In Berlin the drains from the houses receive both the rain water, and dirty water, the dirty water from the kitchen, etc., and the contents of the water closets, conduct them to a system of radial sewers, through which they, by a natural fall, proceed to a dozen various pumping stations within the area of the town. From these the sewage, through the medium of combined force and suction pumps, passes through pipes of three feet or still greater diameter to the land which the corporation of Berlin possesses, and where the sewage is used as a fertilizer. The sewage makes its

final exit through a system of conduits so arranged that before reaching them it has parted with all its manurial power to the soil through which it is made to pass. The sewage water thus filtered reaches the river through the natural fall of the conduits in a comparatively purified state. The sewage is an exceptionally good manure, and the yield of grass on those fields that receive it is something quite out of the common, so that it can be cut some six or seven times during one summer. This system also seems to answer well as far as the sanitary side of the question is concerned, but still there are a good many places which prefer the method by which the sewage is collected in large tanks, whereby it is possible to benefit larger areas by its fertilizing qualities. Frankford-on-the-Maine is another German town where the sewerage system is very perfect, but owing to the excessive cost of land in that locality the sewage is not, as in Berlin, used as manure in the first instance. The sewage is purified before being allowed to escape into the Maine, and the residue is pumped into receptacles from where the farmers fetch it. The town of Hanover is also about to adopt the sewerage system on a larger scale. In Augsburg and Heidelberg the barrel system is used, much more satisfactory in the latter than in the former town. In Heidelberg the corporation itself attends to the emptying of the barrels.—*Science.*

MICROBICIDE SUBSTANCES OF THE SERUM AND ORGANS OF WARM-BLOODED ANIMALS.

M. J. De Christmas (*Annales de l' Inst. Pasteur*, No. 8, 1891) contributes a paper on this subject. Recent experiments have brought a large amount of evidence against the notion that this microbicide power is in any relation to natural immunity. The experiments now described seem to show that it is after all a merely physical or physico-chemical phenomenon. As serum does not long retain its toxicity, the following special method has to be adapted for demonstrating its microbicide power: (1) A tube containing the serum is inoculated; (2) a drop of this mixture is withdrawn at once and used to inoculate a gelatine plate (control); (3) at varying intervals other plates are made from the same tube. Comparison of the numbers of colonies appearing in the plates will give them an idea of the bactericidal power of the serum. Possible sources of error in this method may be (*a*) an irregular distribution of the bacilli; (*b*) unequal size of the drops used to inoculate the plates. Christmas, working on the lines of Metschnikoff, shows also that abrupt changes in the density of the surrounding medium have an inhibitory effect on microbes, so that they may even be killed if inoculated from a more dense to a less dense medium. Taking an anthrax virus which has been grown for ten generations in serum, and introducing a drop of it into each of three tubes containing respectively *bouillon*, sterile distilled water, and boiled water, he made a series of plates from each in the manner above described. Counting the colonies, he found in every case that a very apparent microbicide action had taken place. Other experiments show that perhaps much of the microbicide power of fresh serum is due to the presence of dissolved carbonic acid, for, eliminating the error from difference of density, and using tubes of *bouillon* and serum through which a stream of CO_2 had been passed, the author demonstrated that plates made from these showed little or no development of colonies. In a further series of experiments he proves that normal serum of rabbits, dogs, and horses has of itself little microbicide power, at any rate towards the following: B. anthracis, B. typhosus, B. pyocyaneus, B. diphtheriæ, St. pyogenes aureus. Quite a different result is obtained with the albuminous substances separated from serum by alcohol, and dissolved in distilled water. This solution shows itself very slightly favorable to the growth of microbes. Heating or considerable dilution renders it more assimilable, but even then microbes will not develop well in it. The explanation offered is that microbes require, in order that they may assimilate albuminous bodies, the presence of traces of peptone, and this substance is absent from such solutions. Other more subtle influences may, however, also be at work. In the last part of the paper Christmas attempts to determine whether the albuminoid substances prepared from the organs of animals are similarly by themselves unfit for the nutrition of microbes. In these experiments he uses the organs (1) of normal rabbits, and (2) of rabbits rendered immune against anthrax by pre-

vious injection either of the products of anthrax grown in an albuminous medium, or of a sterilized aqueous extract of the organs of rabbits dead of anthrax. To prepare his albuminoid liquids he adopts the following process. The organs are finely minced, and allowed to stand for twenty-four hours under glycerine, which is then separated and treated with strong alcohol. An abundant precipitate is obtained, which is freed from glycerine by alcohol, dried, and dissolved in water, the last traces of alcohol being removed by a current of warm air. The resulting liquid is yellowish, alkaline, becoming turbid on boiling, and giving a white flocculent precipitate with alcohol. This solution, if obtained from a "receptive" animal, behaves towards bacilli just as the solution of albumins obtained from serum does. Addition of a trace of bouillon to this made it an excellent nutrient medium. If however, the solution were made from an animal rendered immune, the result was different. In this case the liquid would not serve as a nutrient medium, even when mixed with two-thirds of its volume of bouillon: in fact it possessed some antiseptic power. Christmas does not state whether it has the power of rendering animals immune when injected into them. He holds, however, that the substance is not the same as the vaccinating substance contained in the organs of animals dead of anthrax. As to what this liquid contains which is not present in a similar glycerine extract from normal rabbits—whether it be a "defensive proteid" or a ferment—the author gives no definite evidence.—*Brit. Med. Jour.*

VACCINATION LAW IN ITALY.

A new vaccination law went into effect in Italy with the beginning of the year, which requires that every child shall be vaccinated before it is six months old, and again at eight, or at any time whenever the sanitary authority deems it necessary to promote individual or public safety. Those who are not vaccinated and revaccinated according to the requirements of the law, are excluded from schools, factories, workshops, benevolent institutions, etc. Provision is also made for the cultivation and supply of both animal and human lymph.

MEDICAL CHEMISTRY.

PHYLLANTIN.

This is the name given by M. Ossow, a Russian chemist, to a bitter principle extracted from *Phyllanthus niuri*, an euphorbiaceæ from Java. The new principle has the formula C_{30} H_{32} O_4. It crystallizes in colorless needless which frequently form rosettes or fans. It is almost insoluble in water but dissolves freely in alcohol, ether, chloroform, benzene, benzol and glacial acetic ether. Its toxicity is the most notable thing about phyllantin. It is most deadly, but the exact limits of its toxicity have not yet been established.

TESTING DIABETIC URINE.

Every one familiar with the behavior of diabetic urine towards Fehling's solution is aware of the fact that in many cases the reagent causes a yellowish or greenish-yellow separation (it can hardly be called a precipitate), which refuses to settle for a long time, and sometimes does not settle at all. J. Seegen has recently proposed a method (*Wiener. klin. Wochenschr.*, Nos. 6–8) by which this difficulty may be overcome. It is as follows:

Upon a filter in a funnel place some finely powdered animal charcoal (from blood) and pass through it 20 to 40 cc. of urine. Pour the filtrate back until it comes through colorless. Next wash the charcoal with distilled water. The original colorless filtrate and the washings are used for the determination of the sugar. When the original urine contained only about 0.1 to 0.05 per cent. of sugar, the reaction appears in the following manner. The original unfiltered urine decolorizes Fehling's solution and causes, at most, a dichroic, greenish-yellow turbidity. The decolorized, filtered urine, when treated with Fehling's solution and boiled, develops a yellowish turbidity, due to the formation of cuprous hydroxide. In the first wash water the same may still happen, but in the second and third a clean precipitate of red cuprous oxide is obtained, such as is formed in pure aqueous solution of sugar.

For *quantitative* purposes the method is applied as follows: About 50 cc. of the urine are poured into a filter half filled

with blood charcoal, and the filtrate poured back again until it passes entirely colorless. The charcoal is now washed with very small quantities of distilled water, the washings united with the filtrate, the liquid measured (it is best to bring it to the original volume of urine, filtered), and a portion then tested in the usual manner. The red cuprous oxide will now be found to separate in a normal manner. There is, however, a loss of sugar, since the charcoal retains some of the latter. Experiments have shown that this loss amounts to about 10 per cent.

NEWS AND MISCELLANY.

THE SCALPEL.

The Scalpel is the title of a new college magazine issued by the College of Physicians and Surgeons, of Chicago, Ill.

A BIOGRAPHY OF PROF. D. HAYS AGNEW.

At the request of Mrs. D. Hays Agnew, Dr. J. Howe Adams is preparing a biography of her late distinguished husband; in consequence, he is looking for data on this subject, and is desirous of obtaining from all of Dr. Agnew's former friends, colleagues, associates, students and acquaintances all such authentic data as relate in any way to his career or character. Dr. Agnew's acquaintance was so vast and his life was so actively spent among his friends, while his own modesty was so marked, that undoubtedly a great many incidents, anecdotes, characteristic stories, etc., etc., are unknown to his family. All material, however insignificant or small, will be welcomed, and credit will be given to all data which are used.

VACCINATION IN ITALY.

The *Sanitary Inspector* states that a new vaccination law went into effect in Italy with the beginning of this year, which requires that every child shall be vaccinated before it is six months old, and again at eight, or at any time whenever the sanitary authority deems it necessary to promote individual or public safety. Those who are not vaccinated and revaccinated according to the requirements of the law, are excluded from schools, factories, workshops, benevolent institutions, etc. Provision is also made for the cultivation of both animal and human lymph. This has a direct interest for people in this country in view of the large and constantly increasing Italian immigration.

A NEW, SAFE METHOD OF ADMINISTERING TOXIC MEDICAMENTS.

The increased knowledge resulting from research in the fields of botany, chemistry, physiology, pharmacy, and materia medica has created a demand on the part of the medical profession for the essential or active principles of drugs in preference to the more cumbersome, less definite pharmaceutical preparations which custom and authority have so long sanctioned.

Not a few alkaloidal principles of drugs have been isolated, and are now frequently prescribed. The conservative element of the profession have, however, in view of the toxicity of certain isolated medicinal principles, and the acknowledged variety of strength and activity of products of this character of different manufacture, been loath to employ them when indicated.

The doses sometimes being fractions of a thousandth or hundredth, it is not possible for the physician to always bear them in mind, and in prescribing he is often in doubt as to what constitutes the proper therapeutical dose, and what the dangerous toxic one.

Dr. E. Trouette, in a paper read before the Paris Academy of Medicine, and published in the *Revue de Thérapeutique*, entitled "Duodecimal Doses of Toxic Medicaments," proposes a method of obviating the difficulties hitherto preventing the general use of many valuable medicinal principles. The plan he proposes is a new method of dosology based on the rational division into twelve parts of the maximum dose which may be given to an adult in twenty-four hours.

The advantages claimed for this method are, first, accidental poisoning need no longer be feared. Second, dangerous medicaments may from the outset be given in efficient dose without the least risk.

One of our leading pharmaceutical firms has prepared diurnules and diurnal tablet triturates of a large number of toxic medicaments.